

Artificial Intelligence (AI) Consultancy Services RFP # 2025-023

January 13th, 2025



#### **Esolvit Inc.**

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#### State of Texas Vendor ID: 1205835431200

**DIR DBITS Contract: DIR-CPO-4940** <u>https://www.esolvit.com/government-contracts/deliverables-based-dbits</u>

DIR ITSAC Contract: DIR-CPO-5530 https://www.esolvit.com/dirgovernment/contracts/ITSAC-DIR-CPO-5530

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# 1. CERTIFICATE OF OFFEROR AND STATEMENT OF UNDERSTANDING

#### **1.1 COVER SHEET**



REQUEST FOR PROPOSALS For Artificial Intelligence (AI) Consultancy Services RFP # 2025-023

Sealed proposals will be accepted until 2:00 PM CT, December 18, 2024, and then publicly opened and read aloud thereafter.

# Esolvit, Inc.

Legal Name of Proposing Firm

# Usha Boddapu

Contact Person for This Proposal

Contact Person Telephone Number

# 512-350-9564

Contact Person E-Mail Address

usha@esolvit.com

CEO/Founder

Title

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Usha Boddapu	CEO/Founder	
Point of Contact for Contract Negotiations	Title	
512-350-9564	usha@esolvit.com	
Point of Contact Telephone Number	Point of Contact Person E-Mail Address	
Acknowledgment of Addenda (initial): #1 UB	#2 #3 #4 #5	

NOTE: Any confidential/proprietary information must be clearly labeled as "confidential/proprietary". All proposals are subject to the Texas Public Information Act.

COVER SHEET

# **1.2 COMPREHENSION OF REQUIREMENTS AND EXPECTED OUTCOMES**

#### Respected North Central Texas Council of Governments Team,

Thank you for the opportunity to participate in RFP #2025-023 for Artificial Intelligence (AI) Consultancy Services. We understand NCTCOG's goal to leverage Artificial Intelligence (AI) to enhance operational efficiency, improve decision-making, elevate service delivery, and foster innovation across its organizations. Esolvit Inc. is a qualified AI consultancy firm providing expertise in identifying, developing, and implementing AI strategies and solutions that align with the organization's goals. Our team is committed to delivering a comprehensive 5-year AI roadmap, feasibility studies, pilot projects, and training to ensure sustainable adoption. By addressing organizational needs, crafting tailored solutions, and adhering to public sector standards, we aim to empower NCTCOG and its members with secure, ethical, and innovative AI strategies for long-term success.

# 2. KEY PERSONNEL

Our team is composed of seasoned professionals with extensive expertise in Artificial Intelligence (AI) consultancy, data management in compliance with regulations and a history of successful collaborations with public sector organizations. Each member brings a unique skill set and a proven record of excellence to ensure the seamless and impactful execution of the services outlined in RFP #2025-023.

# 2.1 KEY MANAGEMENT PROFILES FOR THIS PROJECT

#### Usha Boddapu, Federal & SLED Government Account Executive

Usha Boddapu is a seasoned leader with 27 years of experience in Artificial Intelligence and government contracting, specializing in managing multi- million-dollar contracts across various sectors. Holding a Master's in AI from UT McCombs, she combines technical expertise with business innovation. Usha serves as the Chief AI Scientist at Arytic, Inc., where she leads the development of AI Predictive Analytics Software to transform organizational outcomes. She has contributed to the FORBES AI Executive Advisory Board and currently manages AI solutions and advanced IT services for federal, state, local, and educational sectors. Usha's extensive experience includes federal contracts like 8A Stars III GWAC and DBITS frameworks, as well as executing high-value programs such as TIPS and Education 8(a). Her work continues to drive innovation and excellence in both AI and government contracting.

#### Amar Lingam, Chief Data Scientist & AI Strategist

Amar Lingam is a seasoned strategist and practitioner; Amar has served as Chief Data Officer (CDO) and Chief AI Officer for Fortune 500 companies. He possesses a unique blend of expertise in crafting digital transformation strategies from the ground up, guiding clients from legacy systems to modern architectures, and delivering tangible business results. He partners with customers on their AI journeys, acting as a trusted advisor throughout their transformation process. Amar has led data science teams, developed AI roadmaps, and spearheaded initiatives in analytics, CRM, and product innovation for companies like CDW, CA Technologies, Snapfish, and Citibank. A published author and sought-after speaker, he also serves on the analytics board at the McCombs School of Business at The University of Texas at Austin.

#### Sri Boddapu, Head of AI Vision & Product Innovation

Sri Rao Boddapu is a visionary leader with over 30 years of experience in AI, Big Data, and technology innovation. As Head of AI Vision & Product Innovation, he leads the development of cutting-edge AI solutions that enable organizations to harness the power of data for strategic growth. As Founder and CEO of Arytic and COO of Esolvit Inc., Sri has built multi-million-dollar enterprises, created thousands of jobs globally, and led ventures recognized by Intel, NASSCOM, and GAACC. His expertise spans AI, cloud computing, cybersecurity, and social commerce, with a strong focus on aligning technology with market needs.

#### **Deelip Pogiri, Senior Engineering Manager**

Deelip Pogiri brings over 19 years of IT experience, specializing in cloud migrations, DevOps, application development, and microservices architecture. Leveraging technologies like Azure, AWS, CI/CD, and containerization, he develops scalable, resilient solutions. A certified SAFe Agilist and PMI-PMP professional, Deelip excels in project management, risk mitigation, and building high-performing teams across onsite and offshore models. His expertise in system design and site reliability engineering has driven the success of large-scale cloud migrations and optimized infrastructure for cost efficiency.

#### Ravi Chintala, Principal AI Architect

Ravi Chintala, a seasoned AI architect with over 20 years of experience, specializes in designing and managing cloud and on-premises virtualization solutions like VMware, OpenStack, and KVM. He excels in software-defined storage (SDS) across platforms such as HPE, Dell, and Supermicro and has deep expertise in deploying Microsoft solutions, including Active Directory and Office 365. An NVIDIA AI/ML systems expert, Ravi has implemented advanced AI architectures using DGX, HGX, OVX, and NVIDIA software platforms. With a customer-centric approach and strong leadership in global team management, he consistently delivers innovative, tailored solutions and exceptional client experiences.

# 2.2 KEY TEAM MEMBERS & ORGANIZATION

The Esolvit team comprises a highly skilled group of professionals with extensive expertise across a broad range of technologies and disciplines. Each team member brings specialized knowledge and proven experience critical to the successful execution of this initiative. Below are the key roles that form the foundation of our project team:

Key Members & Project Delivery Team			
AI Strategist	Generative AI Engineer	MLOps Engineer	Backend Engineer
AI Architect	Application Developer	Data Architect	Scrum Master
Data Scientist	Application Architect	Business Analyst	Infrastructure Engineer
Data Analyst	Database Administrator	ML Engineer	Infrastructure Architect
Data Engineer	UI/UX Designer	DevOps Engineer	Project Manager

For detailed profiles of each key team member, including their qualifications, expertise, and relevant experience, please refer to the attachment titled *"Key Team Member Profiles,"* which is included as a separate document accompanying this submission. Please note that team names have been masked in compliance with PIIAA and privacy regulations.



# **3.REFERENCES**

We are pleased to provide the following references, showcasing our proven expertise in delivering AI consultancy services aligned with public sector requirements:

# 3.1 Reference 1

Agency Name	Denver Water
Point of Contact	Jonathan Spitze
Designation	Director of IT Business Technology & PMO
Phone	1 (303) 628-6050
Email	Jonathan.Spitze@denverwater.org
Description of Contracted Services	Addressed data challenges through AI, Generative AI, and modern Search & Infrastructure. It resulted in an AI Strategy and Readiness assessment, use case identification, business case development, and the creation of an AI Center of Excellence (COE) with an implementation plan and stakeholder engagement.

# 3.2 Reference 2

Agency Name	CDW
Point of Contact	Prasad Vadlamani
Designation	Director of AI
Phone	1 (866) 782-4239
Email	prasvad@cdw.com
	Implemented Gen AI to improve productivity, reduce costs, and enhance
Description of	efficiency across applications. Developing chatbots, large language models, and
Contracted	automating contact centers for better customer experiences. Using predictive
Services	analytics for informed decision-making, risk reduction, and optimized
	operations. Ensuring successful AI deployment with strong data governance.

# 3.3 Reference 3

Agency Name	Texas Commission on Law Enforcement (TCOLE)
Point of Contact	Jessica Teseny Capraro
Designation	Chief Information Officer
Phone	(512) 936-7702
Email	jessica.capraro@tcole.texas.gov
Description of	Integrated and modernized authentication and role management across three
Contracted	applications, unifying them under a single login page with multifactor
Services	authentication, streamlined password recovery, and improved account activation.

# **3.4 Reference 4**

Agency Name	Arytic Inc.
Point of Contact	Alan Hulme - Lowe
Designation	Chief AI Strategist
Phone	+1 (651) 226-0077
Email	alan.hulmelowe@gmail.com
Description of Contracted Services	Esolvit developed AI solutions like the AI Resume Parser and Intelligent Match machine, using machine learning, NLP, and psychometrics to optimize job matching. Created customized personality and culture matching technology to improve hiring accuracy, retention, and organizational fit.

# 4. PROJECT-RELATED EXPERIENCE AND QUALIFICATIONS

**Esolvit Inc.** is a global leader in providing information technology services and solutions for enterprises and government industries around the globe. Esolvit is a **Texas State HUB-certified**, **woman-owned and minority-owned** company with active state, local and federal government certifications. With **18+ years of experience**, we have had the privilege of providing solutions to many government entities and take pride in successfully completing and renewing our government contracts. We also work with the world's top private brands, fortune 1,000 companies, multinational companies, and innovative start-ups.

Esolvit is a pioneer in **Artificial Intelligence and Machine Learning solutions**, with a proven track record of innovation and excellence in deep learning, computer vision, NLP, Gen AI, predictive analytics, advanced data and insights. The company's founders pioneered a patented AI Predictive Analytics Hiring Solution, showcased at prestigious events such as Collision Canada and SXSW. This innovative technology was presented to the Department of Defense in 2018 and 2020 during National Encountering Innovation. Esolvit has also led advancements in cutting-edge technologies, including API-based Social Commerce Platforms, Facial Signature Cybersecurity products, and AI-driven Hiring Solutions. Complementing its AI expertise, Esolvit specializes in advanced AI compute and infrastructure, Hyperscalers, cloud services, Large Language Models and can build AI solutions at scale for large volumes of data and users.

# **Esolvit Innovative Differentiators**

Esolvit is a trusted technology partner delivering innovative, scalable solutions tailored to federal, state, and commercial clients. Our Innovation Lab, powered by NVIDIA and AWS Cloud, advances AI/ML and generative AI technologies, leveraging tools like Amazon SageMaker, Rekognition, and Polly. We also manage cloud infrastructures across AWS, Azure, Google Cloud, and Oracle Cloud, optimizing mission-critical projects with cutting-edge technologies. Our comprehensive suite of solutions spans AI-powered hiring tools, data management, software development, and enterprise applications. Supported by in-house innovations and strategic partnerships with Google Cloud, IBM, and AWS, we bring the latest technologies and resources to every engagement.

# **Proven Partnerships and Excellence**

Esolvit has built a strong reputation through successful partnerships with Texas State agencies, delivering exceptional results under DIR DBITS, ITSAC, and TIPS contracts. Our Public Sector division serves state, local, and federal agencies, providing agile, tailored solutions that drive technology transformation with precision and accountability. We are committed to delivering flexible, transparent solutions that meet high standards.

Esolvit's collaborations include successful partnerships with:

- Texas A&M Forest Services
- Texas Commission on Law Enforcement (TCOLE)
- Texas Higher Education Coordinating Board (THECB)
- Texas Education Agency (TEA)
- The University of Texas (UT Austin)
- Texas Department of Motor Vehicles (DMV)
- Health & Human Services (HHSC)

- Department of Family and Protective Services (DFPS)
- Railroad Commission (RRC)
- Comptroller of Public Accounts (CPA)
- Texas Parks and Wildlife Department (TPWD)
- Austin Energy
- Cap Metro
- 3M
- DART



# **Esolvit's AI Expertise & Technical Projects**

#### Comprehensive Suite of Solutions



Asset IQ

AI-powered media asset insights and management platform designed for effortless extraction of valuable metadata from videos and images. It enables users to dive deep into media content, Identify elements of interest, and simplify the archival search process using natural language.



Panorama offers a comprehensive, Real-time view of customer information, Including Firmographics, Intent signals, Sales trends, Propensity, Funding, Events, and more all in one place. It saves time, Increases sales, and reduces third-party subscription costs, Making it an essential tool for sales professionals across industries.

#### Transforming HR with Arytic: Esolvit's Patented Next-Gen AI Predictive Hiring Platform

At Esolvit, we are proud to present Arytic, our patented AI solution and proprietary intelligence that represents the pinnacle of our expertise in artificial intelligence, machine learning, and psychometrics. Designed to transform talent acquisition, Arytic improves job matching, enhances employee retention, and ensures organizational fit, making it a game-changer in the recruitment industry.

Esolvit has spearheaded Arytic's development, leveraging over eight years of research, innovation, and refinement. Our team of data scientists, AI specialists, and product engineers has integrated cutting-edge AI algorithms and psychometric assessments to create a platform that not only streamlines the recruitment process but also provides deep insights into candidates' personalities, skills, and cultural alignment. Arytic stands as a testament to Esolvit's commitment to innovation and excellence in HR technology.



Next-Gen AI Predictive Hiring Solution, Arytic empowers hiring managers with advanced AI recruiting tools and software, offering real-time prospect evaluation. Our advanced applicant tracking systems (ATS) and interview scheduling capabilities streamline talent acquisition, ensuring a smooth and efficient hiring journey. Capture the power of AI to discover the perfect potential candidates and make data-driven decisions.





Arytic, the robot, is always learning and adjusting his suggestions based on your input, the more information you provide, the better your experience. Our interactive platform is voice-activated for when you are away from your keyboard.

# Video Sizzle

Showcase your open job by creating a 30-45-second- video that engages candidates and allows them an inside view of your company. Invite your candidates in to take a tour of your company and what that environment will look like for the candidates.



#### Advanced Job Wall

April: Sall-inclusive tier provides you access to a condensed job wall that instantly shows you the entrie file cycle of each job post including number of views, suggested profiles, likes, withdraws, candidate profiles, etc. The job wall is a one-stop adution designed to save you time.

# **Esolvit Contracts:**

ESOLVIT CONTRACTS			
DIR ITSAC	Information Technology Staff Augmentation Services: DIR - CPO - 5530		
DIR DBITS	Deliverables Based Information Technology Services: DIR - CPO - 4940	LISO LISO LISO	
City of Austin	IT Staffing Augmentation MA 5000 – NC240000002	9001-2015 OMPANI OMPANI OMPANI OMPANI	
Austin Energy	Temporary IT Staffing Services MA 1100 – NC220000092		
TIPS	The Interlocal Purchasing System Contract 230703, 240101, 240601	NAICS CODES	
Region One Education Service Center	Professional Consultant Services 23-0127	541511 541512 541513 541519	
MHMR Tarrant County	Temporary Staffing Services: EP213236	541611 561320	
> Accenture	Staff Augmentation Services	NIGP CODES	
accenture Federal Services	IDIQ: MSA0040	Class 208 Class 958 Class 209 Class 951	
GSA 8A STARS	GWAC 8A STARS III	Class 918 Class 962 Class 920 Class 969	

# **Esolvit Certifications:**

Esolvit is an ISO-certified in Information Security Management System, International Standard for IT Service Management System and Quality Management Systems. These certifications provide a framework for streamlining operations and enable a culture of continuous improvement, helping reduce costs - benefits that are directly passed on to clients.

- ISO/IEC 27001:2022 Information Security Management Systems
- ISO/IEC 20000:1:2018 International Standard for IT Service Management System
- ISO 9001:2015 Quality Management Systems

# **State Certifications**:

• HUB Certified by the State of Texas and CMBL Registered.

#### **Federal Certifications:**

• SBA, WOSB, WBENC, NMSDC, USWCC, USPAACC, SAM Registered, and E-Verify.

**Esolvit Awards:** Esolvit's commitment to excellence is demonstrated through numerous prestigious recognitions, including being honored as the '**Professional Services Firm of the Year 2020'** by the **"U.S. Department of Commerce"** and '**Supplier of the Year 2020'** by the **City of Austin**. Additionally, Esolvit has been consistently named among the '**USPAACC Fast 50 & Fast 100 Companies** of the Year' in 2021, 2022, and 2024, further solidifying its reputation as a distinguished leader in the industry.



# **5. TECHNICAL PROPOSAL**

# **5.1 OBJECTIVES**

The objectives of the AI consultancy services include but are not limited to: a. Assessing current organizational processes and identifying opportunities for AI integration, with specific examples relevant to various departments (e.g., public safety response optimization, citizen engagement tools, predictive maintenance in infrastructure).

Esolvit understands the business challenges, identifies potential opportunities to solve them leveraging AI based approaches, and implements the identified use cases. This requires discovery sessions with various business stake holders from NCTCOG's participating entities, conducting internal surveys, reviewing existing solutions and technology landscape, gathering feedback from the current users, looking at industry best practices and possibilities for each department and conducting workshops and training sessions. Through all of these, we will identify the use cases and work with the key decision makers to prioritize these use cases and then we will build a roadmap which will be sent for the review and approvals. Once the roadmap is aligned on and approved, we can implement these use cases, solve the challenges, provide automation, create efficiencies using AI based approaches.

To enable all of these, we follow systematic approach mentioned below to assess the AI readiness and implementation:

- Identify ROI opportunities and business goals
- Assess data infrastructure: quality, quantity, security
- Evaluate AI feasibility and suitable techniques
- Prioritize projects based on impact and resources
- Identify skill gaps and develop a training plan
- Create a comprehensive AI strategy and roadmap
- Implement and monitor AI solutions
- Continuously evaluate and improve AI readiness

Examples for AI integration in various departments:

- <u>Education</u>: AI can tailor educational content to the needs of individual students and can provide AI-powered tutoring systems, personalized instruction and feedback.
- <u>Healthcare:</u> AI-powered image analysis tools can detect diseases like cancer more accurately and efficiently than traditional methods.
- <u>Finance</u>: AI algorithms can identify fraudulent transactions by analyzing patterns in large datasets.

# b. Recommending AI tools, frameworks, and applications to solve specific organizational challenges.

Esolvit offers a unique blend of AI-driven tools, AI framework development and platforms based on client's needs. We will determine the right architecture and infrastructure depending on the use cases and will set that up depending on your needs. By carefully considering infrastructure requirements and implementing effective integration strategies, we can ensure that AI solutions deliver maximum value while minimizing technical challenges.

We will bring industry best practices, through our extensive industry partnerships with various niche AI technology providers, both on software and hardware platforms. We will design the solutions to scale for your user base, with minimal latency and maximum responsiveness and a user-friendly solution approach. Esolvit possesses deep domain expertise in various industries, including the public sector, enabling us to understand and address specific business challenges. We will explore how AI can be leveraged to solve specific business challenges in your industry. This includes case studies and practical examples relevant to the participating agencies.

c. Developing a comprehensive data strategy alongside an AI roadmap, emphasizing data quality, governance, privacy, and security.

To ensure the successful implementation of AI, a comprehensive data strategy is essential. This strategy should address the key aspects of data quality, governance, privacy, and security. A number of regulations in the industry such as GDPR have a profound impact on the data strategy. Esolvit considers all of these considerations in designing an effective data strategy.

- Data quality is paramount for successful AI initiatives. It involves cleaning data to remove inconsistencies, errors, and outliers, and enriching it with relevant context and features to enhance model performance. Data validation ensures accuracy and completeness.
- Data governance is essential for managing data effectively, including defining clear data ownership and accountability, establishing consistent data standards and formats, and implementing robust access controls to protect sensitive data. Adhering to data privacy regulations, such as GDPR and CCPA, and implementing strong data encryption and regular security audits are crucial for data privacy and security.
- The AI roadmap involves identifying valuable business use cases for AI, preparing data for model training, selecting and training appropriate algorithms, deploying models into production while continuously monitoring their performance, and finally, engaging in continuous improvement to refine and enhance AI models over time.

Esolvit combines a robust data strategy with a well-defined AI roadmap, to help organizations maximize the potential of AI while minimizing risks.

# *d.* Developing a strategic roadmap for AI implementation, including governance, timelines, milestones, and deliverables.

Esolvit develops a comprehensive AI strategy and roadmap that will drive innovation, improve efficiency, enhance public services and implement robust data governance and security measures to protect sensitive information. Esolvit follows a strategic planning and AI advisory that supports AI readiness assessment; public sector entities can gain valuable insights into their current capabilities, identify areas for improvement, and develop a strategic roadmap for AI adoption.

Esolvit establishes a robust AI governance framework, including ethical guidelines and risk assessment and ensuring data quality, accuracy, and completeness. We implement robust data governance and security measures and develop realistic timelines for each phase of the implementation plan. We set specific milestones within each phase to track progress. We clearly define the expected outcomes and deliverables for each phase, including data products, models, applications, and reports. We will publish our periodic progress reports and work in partnership with the business stakeholders to enable value.

# *e.* Ensuring that all AI implementations comply with legal standards (e.g., FOIA, grant/state/federal regulations) and establish technical, administrative, and policy controls for internal AI use.

Esolvit adheres to industry standards and regulations. We ensure data consistency and compatibility across different systems by establishing data standards and formats. With our expertise in multiple AI technologies such as OpenAI, AWS, Azure, Infrastructure management, robust security protocols, and compliance standards. We will partner with the participating government agencies to focus on innovation, ensuring seamless rapid prototyping and solution development. We implement strong security measures to protect sensitive data and adhere to relevant data privacy regulations. Recognizing the importance of ethical AI practices, we assist in developing robust policies and guidelines. These guidelines will address Data privacy and security measures to protect sensitive information used in AI models. We will bring in industry best practices, guidelines, regulation needs and comply with the legal standards through policy controls for internal AI use.

# f. Providing training and knowledge transfer to the organization's internal teams on AI capabilities, ensuring employees effectively adopt and utilize AI tools.

Esolvit delivers an expansive suite of training programs for participating entities, emphasizing both foundational knowledge on AI related technologies/approaches and hands-on experience across emerging technologies and essential business solutions. Esolvit will work with the participating key stakeholders and program participants to understand each business needs, perform the AI readiness assessments and design the best strategy for that need, build the solutions and enable them through training, education and ongoing maintenance, support and provide detailed documentation to facilitate troubleshooting and knowledge transfer.

Esolvit conducts detailed training and knowledge transfer sessions through a handover plan to make sure that the agencies getting these solutions can adopt and maintain them with their skilled workforce. We are also happy to augment the skills needed to continue to support and enhance the solutions as needed in future development.

# g. Quantify the long-term value AI brings to the organization and create business cases for both immediate and future expenditures, supporting sustained AI investment and adoption.

Esolvit identifies strategic initiatives that align with NCTCOG participating entities long-term goals and focus on projects that have the potential to fundamentally change the way the participating entities operate, such as developing new AI-powered solutions, products or services and plan for the scalability of AI solutions to meet future needs.

Esolvit has a strong team of AI experts to provide ongoing training and development opportunities. We will measure the financial return on the investment in the project, considering both direct and indirect costs and benefits. We will consider the potential return on investment (ROI) of each project when making decisions about which ones to pursue first and build upon our experience from key government and private sector clients to enable business value. This strategy underscores our commitment to delivering innovative AI solutions and secure, scalable cloud modernizations for complex legacy systems. Through a focused and data- driven information and insight sharing approach, we aim to effectively connect with our target audience, showcase the capabilities that the users can leverage and to provide citizen friendly services for the public entities.

# *h.* Supporting the pilot and/or full-scale implementations and providing comprehensive training for sustainable, in-house AI operations.

We embrace an Agile methodology and PMP based project management practices to manage and implement pilot projects, allowing for flexibility, adaptability, and iterative development. Esolvit will assist in managing the pilot and full-scale implementations by gathering valuable insights for development. We will take feedback from the respective business owners and incorporate them into the real-world solutions.

Esolvit proudly offers specialized managed services, the Innovation Lab powered by AWS, Azure and Google Cloud services, designed to catalyze innovation for NCTCOG's participating entities. We have driven many such pilots for our extended customers such as the Texas Commission of Law Enforcement (TCOLE), Texas Department Of Criminal Justice (TDCJ), Denver Water, Arytic, and many other federal agencies. Esolvit delivers an expansive suite of training programs for NCTCOG participating entities, emphasizing both foundational knowledge and hands-on experience across emerging technologies and essential business solutions.

# *i. Incorporating a 5-year AI roadmap to guide the organization's future AI development.*

Esolvit provides a strategic framework for NCTCOG's AI development. We help align resources, prioritize initiatives, and measure progress towards long-term multi-year roadmaps and goals. Esolvit leverages cutting-edge advancements through a dedicated focus on innovation. We work year-round to develop product and strategy roadmaps, ensuring our solutions remain aligned with the latest industry trends, giving the best-in-class architecture and scalability for NCTCOG's participating entities.

AI is a rapidly evolving field. Esolvit will continuously evaluate and improve your AI Readiness by evaluating the quality, and completeness of existing data and data assessment by evaluating the quantity, accessibility of data and to ensure data is clean, accurate, and relevant to the AI initiatives. We perform predictive analytics and advanced analytics that optimize operations and support strategic future planning. By prioritizing innovation and continuous improvement, our solutions provide a future-proof approach to NCTCOG's participating entities.

Based on all these aspects of planning, identification, prioritization of use cases, preparing solutions and providing training, Esolvit prepares a 5-year roadmap of all these initiatives to guide NCTCOG's participating entities' future AI development.

# 5.2 SCOPE OF WORK

The selected AI consultancy firm will perform the following tasks:

# **5.2.1 AI Strategy Development**

a. Collaborate closely with individual departments to identify specific AI use cases and associated challenges, such as improving response times in public safety or reducing procurement costs, to develop tailored solutions that align with departmental needs.

Esolvit can evaluate NCTCOG clients' current AI readiness and identifies areas for improvement by following the below steps:

#### 1. Identify ROI Opportunities and Business Goal

Esolvit will assess NCTCOG's participating entities organization's goals and objectives and understand the potential where AI can add the most value in achieving those goals. We will also understand and discuss the specific problems these entities are trying to solve or the opportunities they are trying to capture with AI. We will then help them tie business value and ROI to these initiatives.

# 2. Analyze Data Infrastructure

AI relies on data to learn and make predictions. Therefore, it is important to assess the quality, quantity, and accessibility of your client's data. We will also consider data privacy and security concerns.

# 3. Assess AI Feasibility

Esolvit will assess NCTCOG's participating entities current data, technology, and resources, and evaluate the potential to implement AI solutions to address the identified opportunities. There are many different AI techniques, and some may be more suitable for your clients' needs than others.

# 4. Prioritize Based on Effort and ROI

We will consider the potential return on investment (ROI) of each project, discuss with the business stakeholders and help collaboratively make decisions about which ones to pursue first.

# 5. Identify Skill Gaps

Esolvit will evaluate the skill gaps to understand NCTCOG's participating entities have the right people with the right skills to develop and deploy AI solutions. This includes data scientists, machine learning engineers, and AI ethicists. We will then provide a skill capability matrix and provide recommendations to help upskill the key resources as per NCTCOG's client needs. If the clients don't have the necessary skills in-house, we will augment the skills and we will advise them on investing in relevant training or hiring new talent.

# 6. Develop an AI Strategy and Roadmap

Esolvit will build the AI strategy to outline NCTCOG's participating entity organization's vision for AI, their goals and objectives, and their roadmap for achieving them. We will build the roadmap and the implementation plan for them. It would also include a plan for managing risk and ensuring ethical AI practices.

# 7. Implement and Monitor Your AI Strategy

This involves developing and deploying AI solutions, training NCTCOG's participating entity clients, employees, and monitoring their progress. We will help them adapt to this strategy as needed based on their analysis results.

# 8. Continuously Evaluate and Improve the AI Readiness

AI is a rapidly evolving field. Therefore, it is important to continuously evaluate your AI readiness and identify areas for improvement. This may involve updating NCTCOG's participating entities' AI strategy, investing in new technologies, or hiring additional talent.

Sample Project: Empowering the Energy and Utilities Sector:

Esolvit is an innovative company specializing in AI-driven solutions for many industry verticals and public sector entities. Here is an example from the energy and utilities industry. Our cutting-edge technology enables businesses to:

- Optimize energy consumption: By analyzing demand patterns and identifying potential risks, they can now make informed decisions to reduce costs.
- Enhance grid management: Advanced analytics helped utilities support teams ensure grid stability, anticipate equipment failures, and integrate renewable energy sources.
- Strengthen security and compliance: Robust cybersecurity measures were put in place to protect sensitive information and ensure adherence to industry regulations.

Ultimately, we empowered the organization to achieve greater efficiency, sustainability, and resilience in the dynamic energy and utilities landscape. By conducting a thorough AI readiness assessment, utilities can gain valuable insights into their current capabilities, identify areas for improvement, and develop a strategic roadmap for AI adoption. This will enable organizations to maximize the benefits of AI-powered solutions and achieve significant operational and financial improvements.

b. Conduct a comprehensive needs assessment to understand the organization's goals, existing processes, challenges, and value to be added to the organization by leveraging AI.
c. Develop a long-term AI strategy aligned with the organization's strategic plan and 5-year vision.

The following addresses the response to both points b and c.

Esolvit follows a step-by-step approach to developing a comprehensive AI strategy and roadmap for public entities, addressing their unique needs. Our framework is based on the following key areas, and we will go through each of these against the sub-areas mentioned to take inputs into the long-term AI strategy. Our team of AI experts will work with NCTCOG's participating entities to craft a long-term AI strategy. This strategy will include clearly defined AI goals and objectives aligned with client's broader business goals, prioritized roadmap outlining a detailed implementation plan for AI initiatives, Identification of key performance indicators (KPIs) for measuring AI success.

Esolvit provides a comprehensive AI readiness assessment of the following key areas to evaluate an organization's readiness for AI adoption. To effectively assess the needs, we will look into Data Assessment, Current state of Infrastructure, Talent and Skill availability, Organizational Readiness and then identify the use cases based on the business challenges outlined. The following sub-areas of focus in each of these areas highlight the framework that Esolvit follows to comprehensively come up with the assessment.

# 1. Data Assessment

- Data Quality: Evaluate the accuracy, completeness, and consistency of data from various sources (Ex: Human Resources, Information Technology and Cybersecurity, Library Services, Public Works, Utility Billing) to identify data gaps and inconsistencies.
- Data Accessibility: Assess the accessibility and availability of data for AI projects, ensuring easy integration from different sources.
- Data Privacy and Security: Review data privacy and security policies and procedures to identify potential risks and vulnerabilities associated with data sharing and storage.

# 2. Infrastructure Assessment

- Computing Power: Evaluate the availability of sufficient computing resources (CPUs, GPUs) to support AI workloads and assess the need for cloud-based solutions or on-premise infrastructure.
- Storage Capacity: Evaluate the storage capacity required for storing and processing large datasets and assess the need for data storage solutions (data lakes, data warehouses).
- Network Connectivity: Evaluate the network infrastructure's ability to support real-time data transfer and processing, assessing the need for high-speed network connections and low-latency communication.

# 3. Talent Assessment

- Data Science and AI Expertise: Assess the availability of data scientists, machine learning engineers, and AI experts within the organization, identifying any skill gaps and training needs.
- Domain Expertise: Evaluate the level of domain expertise within the NCTCOG's participating entities and identify opportunities for collaboration with academic institutions or research organizations to upskill the identified resources.

# 4. Organizational Readiness

- Leadership Support: Assess the level of support from senior leadership for AI initiatives and identify potential barriers to AI adoption.
- Cultural Factors: Evaluate the organizational culture's receptiveness to change and innovation, identifying any potential resistance to AI adoption.
- Change Management: Assess the organization's ability to manage change and implement new technologies, identifying the need for change management strategies and training programs.

# **5. Use Case Identification**

- Identify Potential Use Cases: Assess the potential of AI to address specific challenges and opportunities in NCTCOG's participating entities.
- Citizen-Centric Approach: Prioritize use cases that directly benefit citizens, such as improving service delivery, enhancing public safety, or optimizing resource allocation.

# 6. Create a Phased Implementation Plan:

- Pilot Projects: Start with small-scale pilot projects to test AI solutions and gain valuable insights.
- Scalability: Plan for the scalability of AI solutions to meet future needs.
- Continuous Improvement: Establish a feedback loop to continuously monitor and improve AI systems.

# 7. Monitor and Evaluate:

- Performance Metrics: Define key performance indicators (KPIs) to measure the impact of AI initiatives.
- Regular Evaluation: Conduct regular evaluations to assess the effectiveness of AI solutions and identify areas for improvement.
- Adaptability: Be prepared to adapt to changing technologies and evolving needs.

Benefits: NCTCOG's participating entities can gain data-driven insights with a clear understanding of their current AI readiness level and potential opportunities. They will have prioritization of initiatives and a tailored AI Roadmap. They will also get a customized strategy outlining the next steps for successful AI adoption.

**Use Case Example:** We recently conducted an ARA for a leading utility which revealed an abundance of sensor data, water pipeline infrastructure but limitations in processing power. Our recommendations led to a cost-effective cloud-based infrastructure solution and a focused plan for AI-powered diagnostics.

NCTCOG's participating entities public entities, such as NCTCOG's participating entities, face unique challenges and opportunities when adopting AI.

- Public Trust and Transparency: Ensuring that AI systems are fair, unbiased, and transparent.
- Data Privacy and Security: Protecting sensitive citizen data.
- Scalability and Interoperability: Integrating AI solutions with existing systems and processes.
- Budgetary Constraints: Balancing the costs of AI initiatives with limited resources.

Esolvit ensures AI strategies align with an NCTCOG entity's overarching goals through a rigorous, datadriven approach. We begin by clearly defining core objectives and prioritizing AI opportunities that will deliver the greatest impact. This involves setting SMART goals, conducting thorough data assessments, and establishing robust data governance frameworks. We foster a collaborative environment, involving cross-functional teams and key stakeholders throughout the strategy development process. Ethical considerations, including fairness, transparency, and privacy, are integral to our approach. Finally, we emphasize continuous evaluation and adaptation, ensuring the AI strategy remains aligned with evolving organizational goals and technological advancements. This comprehensive approach enables Esolvit to develop effective AI strategies that drive innovation, improve efficiency, and enhance public services within the unique context of public entities.

# 5.2.2 Feasibility Study and Use Case Identification

a. Identify potential AI use cases, analyze their feasibility, and assess value. b. Document compliance requirements (external and internal). c. Provide detailed pros, cons, and risk-benefit analysis for each use case. d. Ensure feasibility study includes considerations related to data strategy, including data quality, governance, and integration readiness. e. Prioritize use cases based on impact and ease of deployment.

The following addresses the response to points a through e.

**Use Case Identification:** Esolvit has the framework to identify NCTCOG's participating entities use cases by assessing the potential of AI to address specific challenges and opportunities in the industry and prioritize these use cases based on business impact and feasibility.

Here are a few sample use cases:

**Use Case 1:** Shared Services: Multiple public entities within the NCTCOG region collaborate to share resources and services, such as IT infrastructure, procurement, or human resources.

- <u>Pros:</u>
  - Cost savings: Reduced overhead costs by consolidating services.
  - Increased efficiency: Standardized processes and shared expertise.
  - Improved service delivery: Consistent and higher-quality services.
- Cons:

- Loss of local control: Potential for reduced autonomy in decision-making.
- Complexity: Challenges in coordinating and integrating different systems and cultures.
- Risk of failure: Potential for disruptions if the shared service provider experiences issues.
- <u>Risk-Benefit Analysis:</u>
  - Benefits: Significant cost savings, improved efficiency, and enhanced service quality.
  - Risks: Potential loss of local control, increased complexity, and service disruptions.
  - Mitigation strategies: Risk mitigation planning, strong governance, and robust contingency plans can mitigate these risks.

**Use Case 2:** Regional Transportation Planning: NCTCOG coordinates regional transportation planning efforts, including developing long-range plans, prioritizing projects, and securing funding.

- <u>Pros:</u>
  - Comprehensive planning: A holistic view of regional transportation needs.
  - Efficient resource allocation: Prioritization of projects based on regional impact.
  - Improved mobility: Enhanced connectivity and reduced congestion.
- <u>Cons:</u>
  - Bureaucracy: Potential for slow decision-making and bureaucratic hurdles.
  - Political considerations: Balancing the needs of different communities and stakeholders.
  - Limited funding: Insufficient resources to implement all planned projects.
- <u>Risk-Benefit Analysis:</u>
  - Benefits: Improved regional mobility, economic growth, and reduced environmental impact.
  - Risks: Bureaucratic delays, political challenges, and funding constraints.
  - Mitigation strategies: Strong leadership, effective stakeholder engagement, and innovative funding strategies can help mitigate these risks.

Refer to 5.2.3(c) for more information on compliance response.

Identify ROI Opportunities and Business Goals: Esolvit will assess NCTCOG's participating entities organization's goals and objectives and understand the potential where AI can add the most value in achieving those goals. We will also understand and discuss the specific problems these entities are trying to solve or the opportunities they are trying to capture with AI. We will then help them tie business value and ROI to these initiatives.

# 5.2.3 AI Solution Design and Roadmap

a. Research and document various External Compliance (e.g. Freedom of Information Act, grant requirements, and the various local, state, and federal regulations), and Internal Compliance (e.g. Designing technical, administrative, policy controls, among others, for the safe use of AI) b. Design appropriate AI models, frameworks, or tools for selected use cases.

Esolvit operates within a complex regulatory landscape, adhering to local, state, federal, and international laws, regulations, and industry standards, including GDPR. We recognize the dynamic nature of AI regulations and proactively address compliance challenges. Key considerations include data privacy and protection, intellectual property rights, algorithmic transparency, and export controls. We establish robust internal ethical guidelines and adhere to strict cybersecurity measures to ensure responsible AI development

and deployment. Our commitment to compliance ensures that all AI initiatives are conducted ethically, legally, and responsibly.

Esolvit is committed to developing and deploying AI solutions that are fair and unbiased, transparent and explainable, accountable, secure and privacy-preserving. We are confident that our team, approach, and commitment to responsible AI make us the ideal partner to help the NCTCOG participating entities realize their full potential.

Here is Esolvit's framework for AI models, framework, tools and use-case solutions and deployment:

# **1. Ethical Governance**

- <u>Safety:</u> Ensuring AI systems are designed and operated to minimize potential harm.
- <u>Accountability:</u> Establishing clear accountability for AI decisions and outcomes.
- <u>Human-Centered Design</u>: Prioritizing human values and needs in AI development.
- <u>Stewardship:</u> Responsible management of AI technologies.
- Data Integrity and Accuracy: Ensuring data quality and reliability.

# 2. Data Governance

- Data Collection and Metadata: Collecting and storing data with appropriate metadata.
- <u>Integration and Federation</u>: Integrating data from various sources and federating data across different systems.
- <u>Access:</u> Controlling access to data to authorized personnel.
- Controls and Usage: Implementing policies to govern data usage and prevent misuse.
- Data Classification: Categorizing data based on sensitivity and security requirements.
- Data Lifecycle: Managing the entire lifecycle of data, from creation to deletion.
- <u>Role-Based Access Control (RBAC)</u>: Assigning access privileges based on roles and responsibilities.
- <u>Data Stewardship</u>: Assigning ownership and accountability for data.

# 3. Model Governance

- <u>Validation and Testing:</u> Rigorously testing AI models to ensure accuracy, reliability, and fairness.
- <u>Performance Monitoring</u>: Continuously monitoring model performance and identifying potential issues.
- <u>Bias Detection</u>: Implementing techniques to detect and mitigate bias in AI models.
- <u>Model Selection and Architecture:</u> We choose the most appropriate algorithms, such as neural networks, decision trees, or ensemble methods, based on the problem and data characteristics and design custom model architectures, including deep learning models like convolutional neural networks (CNNs), recurrent neural networks (RNNs), and transformer-based models. We train our models using advanced techniques like gradient descent and backpropagation.

# 4. Stakeholder Engagement

- <u>Establish Stakeholders and RACI</u>: Identifying key stakeholders and defining roles and responsibilities.
- <u>Empowerment and Persistence:</u> Empowering stakeholders to drive AI initiatives and fostering a culture of innovation.
- <u>Accountability:</u> Holding stakeholders accountable for their roles in AI development and deployment.
- <u>Inclusivity and Innovation</u>: Creating an inclusive environment that encourages diverse perspectives and innovative ideas.
- <u>Lab and Incubation</u>: Establishing dedicated spaces for AI experimentation and innovation.

• <u>Standups:</u> Regular meetings to discuss progress, challenges, and next steps.

# 5. Risk Management

- <u>Training and Awareness:</u> Educating employees about AI risks and best practices.
- <u>Crisis Response and Risk Mitigation Strategy</u>: Developing plans to respond to AI-related incidents and mitigate risks.

# 6. Transparency and Outputs

- <u>Model Documentation</u>: Documenting the development, training, and deployment of AI models.
- <u>User Testing and Experience Design:</u> Involving users in the design and testing of AI systems.
- Explainability: Making AI models interpretable and understandable.
- Interoperability: Designing AI systems to work seamlessly with other systems.

# 7. Training and Education

- <u>AI Literacy:</u> Providing training on AI concepts and applications.
- <u>Proof of Concept and Case Studies:</u> Demonstrating the value of AI through real-world examples.
- <u>Startup Incubation</u>: Supporting the development of AI startups and innovative projects.

# 8. Change Management

- <u>Change Management Strategy:</u> Developing a plan to manage the transition to AI.
- <u>Communication Plan:</u> Communicating effectively with stakeholders about AI initiatives.
- <u>Risk Assessment:</u> Identifying and mitigating risks associated with AI implementation.
- Establishing Response Terms: Defining clear procedures for responding to AI-related issues.

# 9. Evaluation of AI Models

- <u>Feedback Loop</u>: Continuously gathering feedback to improve AI systems.
- <u>Incident Response:</u> Having a plan to respond to AI-related incidents.
- Data Quality: Ensuring the quality and reliability of data used to train and operate AI systems.
- <u>Model Governance:</u> Establishing governance processes for AI models.
- Monitoring Metrics: Tracking key metrics to assess the performance of AI systems.

# **10. Reporting or Audit**

- <u>Conducting Regular Audits:</u> Regular audits are essential to assess the performance, effectiveness, and ethical implications of AI systems
- <u>Establishing an Audit Framework:</u> A robust audit framework provides a structured approach to conducting regular audits. Key components of an audit framework include:
- <u>Communicating Audit Results</u>: Effective communication of audit results is crucial for driving improvements and ensuring accountability.

By following this comprehensive framework, NCTCOG participating entities can effectively manage the risks and rewards of AI, ensuring ethical, responsible, and successful AI initiatives.

# c. Provide a comprehensive roadmap, including governance, project timelines, milestones, resource requirements, and key performance indicators (KPIs).

Esolvit proposes a structured roadmap for successful AI implementation, tailored to each NCTCOG participating entity's unique needs. Our approach includes defining clear business objectives, assembling cross-functional teams, and establishing a robust AI governance framework. We prioritize high-impact initiatives, develop comprehensive business cases, and invest in employee training and education.

Throughout the journey, we emphasize stakeholder collaboration, continuous evaluation, and the establishment of key performance indicators (KPIs) to measure and monitor progress. By following this structured approach and adapting to the evolving AI landscape, Esolvit will guide participating entities toward successful AI adoption and maximize the return on their AI investments.

d. Provide a comprehensive cost analysis for each proposed AI solution, including but not limited to anticipated development costs, cloud/compute costs, required licensing/subscriptions, cloud storage/backup, etc.

Esolvit has a comprehensive cost analysis for each proposed AI solution which includes several key components. Development costs for Data Scientists, AI Engineers, Data Engineers and Project Managers, as well as any training required for staff. Cloud and compute costs involve fees for cloud computing services, such as GPU instances for machine learning tasks Additionally, operational costs cover the integration of AI solutions with existing IT systems, deployment expenses, and the potential costs for legal compliance, such as data privacy and ethical audits. Based on this we will develop the AI strategy, assess the current AI capabilities, identify priority applications for AI use, recommend a governance and stakeholder engagement framework, and develop a project and implementation plan. After the initial assessment is done and prioritized, based on our experience in these areas, we are confident to not only be an implementation partner, but also a strategic advisor at each step of the assessment, use cases, prioritization and planning.

Our Pricing Sheet is attached as reference.

# *e.* Ensure AI solutions align with ethical guidelines and public sector regulations, including data privacy laws such as GDPR (if applicable), and customer's internal data loss protection policies.

Esolvit prioritizes data privacy and security, adhering to stringent regulations such as GDPR. We implement a multi-layered approach to safeguard sensitive information. This includes robust technical controls, such as data encryption both at rest and in transit, strong access controls utilizing role-based access control (RBAC) to limit access to authorized personnel, and robust network security measures encompassing firewalls, intrusion detection/prevention systems (IDS/IPS).

Furthermore, we emphasize strong organizational controls. This involves implementing a comprehensive data classification system, providing regular employee training on data security best practices, establishing clear data retention policies, and developing a well-defined incident response plan to effectively address and mitigate potential security breaches. This multifaceted approach ensures the confidentiality, integrity, and availability of all data within the organization, fostering a secure and trustworthy environment for all stakeholders.



AI/MI

**Energy Efficient** 

Esolvit's framework for AI Reference Architecture:

# 5.2.4 Pilot Testing and Implementation Support

a. Guide the organization through the implementation of pilot AI solutions. b. Work with stakeholders to evaluate the pilot projects, troubleshoot issues, and refining solutions as needed. c. Offer post-implementation support for system integration and scaling AI solutions across the organization.

The following addresses the response to both points a through c.

Esolvit employs a structured, Agile-based approach to pilot project management, prioritizing flexibility and collaboration. We utilize a data-driven methodology, focusing on clearly defined objectives, detailed planning, and continuous monitoring and evaluation. Our approach encompasses key steps such as data collection, model development and training, pilot deployment, and comprehensive data analysis to assess performance and identify key learnings. We leverage Agile frameworks, facilitating rapid prototyping, incremental delivery, and continuous improvement throughout the project lifecycle. By fostering strong collaboration between our team and the client's stakeholders, and by implementing robust risk management strategies, we ensure successful pilot project implementation, delivering valuable insights and paving the way for successful AI adoption within NCTCOG's participating entities.

# 5.2.5 Training, Adoption, and Capacity Building

a. Provide training sessions and materials for staff on AI tools and best practices, to ensure effective and efficient use of AI. b. Facilitate workshops to build internal AI capabilities and foster a culture of innovation. c. Develop a knowledge transfer plan to ensure the organization can maintain and update AI systems independently.

The following addresses the response to both points a through c.

Esolvit enables training, adoption and capacity building for it. We believe that effective training is key to user adoption, efficient use, and responsible management of AI solutions. We tailor the training programs to NCTCOG's participating entities. Esolvit AI training and education programs are designed to meet the specific needs of NCTCOG's participating entities. We offer customized programs that target different levels of experience and roles, from basic user awareness to advanced model management. We can help up-skill the existing resources with the AI based courses, tools and techniques. We conduct workshops to build internal AI capabilities and foster a culture of innovation.

# **Key Topics and Skills Covered:**

- <u>Understanding AI Fundamentals</u>: We demystify AI terminology and concepts, providing a solid foundation for understanding how AI works and its potential benefits.
- <u>AI COE:</u> We conduct workshops on establishing an AI Center of Excellence and how it can be used across business needs.
- <u>AI for Business Applications:</u> We explore how AI can be leveraged to solve specific business challenges. This includes case studies and practical examples relevant to your domain.
- <u>Responsible AI Practices:</u> We address ethical considerations and potential biases in AI systems, equipping your staff to use AI responsibly and in a way that aligns with NCTCOG's participating entities.
- <u>Data Management for AI</u>: We provide training on data preparation, labeling, and governance practices crucial for successful AI implementations.
- <u>User Adoption and Change Management:</u> We help your staff understand and adapt to the new workflows and processes associated with AI solutions, promoting smooth transitions and maximizing user buy-in.

• <u>Advanced Model Management (For Relevant Technical Teams)</u>: We offer in-depth training on managing and monitoring AI models, covering topics like model retraining, performance optimization, and troubleshooting.

Leveraging Esolvit's Expertise: Our team includes Data Scientists, Engineers, and AI Specialists with extensive experience developing and deploying AI solutions across diverse industries. We partner with leading technical labs providers, to offer advanced training workshops specific AI applications, building sample solutions and using cutting- edge techniques.

Example: Conducting AI Strategy and Training Workshops:

- Identifying AI Opportunities Workshop: This workshop helps participants identify areas where AI can deliver significant business value, aligning your AI strategy with your long-term goals.
- Custom AI Solution Design Workshop: Working with our experts, participants can co-create a roadmap for developing a custom AI solution tailored to your specific needs.
- Advanced Techniques for Data Preparation and Feature Engineering: This workshop, led by data science specialists, equips your team with advanced techniques for preparing and transforming data to optimize model performance.

We offer a comprehensive training and education program that blends theoretical knowledge with practical experience, leaving your staff well-equipped to leverage AI effectively and responsibly within your organization. Furthermore, we offer flexible training delivery options, including:

- On-site Training
- Virtual Training Sessions
- Blended Learning Programs

We believe in providing a comprehensive and engaging training experience that empowers NCTCOG'S participating entities staff to become active participants in your AI journey. By implementing a comprehensive knowledge transfer plan, and by providing materials for AI implementation organizations can empower their teams to maintain, update, and innovate AI systems, ensuring their continued success. We will understand the NCTCOG's participating entities' specific needs and areas of interest to create a customized AI training program and materials to enable AI awareness, learning of data, analytics and AI concepts and in launching various products and solutions for them.

# **5.3 SPECIFICATIONS AND REQUIREMENTS**

# **5.3.1 Consultant Expertise and Qualifications**

a. Demonstrated experience in providing AI consultancy services to government agencies or similar public sector organizations.

Please refer to Section 4 for an overview of Esolvit's Project Expertise and Qualifications.

# Esolvit's Expertise in IT Project Management, DevOps, AI/ML, and Cybersecurity IT Project Management

Esolvit brings over 60 years of cumulative IT project management experience, delivering comprehensive services with a 100% project delivery success rate. Our team excels in Agile methodologies, with certified professionals in Scrum, Kanban, and SAFe frameworks. We are proficient in leveraging a wide

suite of project management and ITSM tools, including Jira/Confluence, Rally, Azure DevOps (ADO), Asana, Microsoft Project, and ServiceNow, ensuring seamless execution of complex projects.

# AI/ML, Psychometrics, and Real-Time Analytics

Esolvit specializes in leveraging cutting-edge artificial intelligence (AI) and machine learning (ML) technologies to drive transformative business outcomes.

- **AI/ML Solutions:** Advanced AI models for predictive analytics, generative AI, and automation tailored to diverse industries.
- **Psychometrics Integration:** Proprietary psychometric assessments for evaluating candidate fit, enhancing talent acquisition, and boosting organizational performance.
- **Real-Time Analytics:** Real-time data processing solutions to enable actionable insights and faster decision-making across business operations.
- **Custom Software Development:** Expertise in developing scalable, high-performance software tailored to client requirements, ensuring seamless integration and optimal functionality.

# **DevOps/MLOps Capabilities**

Esolvit offers expert end-to-end DevOps and MLOps implementation services, providing tailored solutions to streamline software delivery and infrastructure management.

- **Source Code Management (SCM):** Enterprise-level SCM strategy and training using Git, GitHub, GitLab, Bitbucket, and ADO.
- **Continuous Integration/Continuous Delivery (CI/CD):** Expertise in Jenkins, GitLab CI/CD, CircleCI, ADO, Travis CI, and Bamboo.
- Containerization: Advanced solutions using Docker, Kubernetes, OpenShift, and Helm.
- Configuration Management: Proficient in tools like Ansible, Puppet, and Chef.
- Monitoring & Logging: Robust frameworks with Grafana, Azure Log Analytics, Nagios, Elasticsearch, Logstash, Kibana, Splunk, and Power BI.
- Infrastructure as Code (IaC): Expertise in Terraform, CloudFormation, and Pulumi.
- Additional Capabilities: Disaster recovery setup, observability frameworks, and performance testing.

# b. Proficiency in AI technologies, including machine learning, natural language processing, computer vision, etc.

Esolvit is dedicated to bridging the gap between AI potential and real-world applications. We offer a comprehensive range of AI implementation services to help businesses expand the power of AI and drive innovation. We have various types of implementation services that range from data, analytics, insights to complex machine learning and natural language processing, deep learning capabilities. We perform data analysis by applying statistical and machine learning techniques to uncover patterns and trends and utilize machine learning frameworks like TensorFlow, PyTorch, and Scikit-learn to develop and deploy AI models. We leverage the latest AI and machine learning techniques to deliver state-of-the-art solutions. We work with NVIDIA, AWS, Azure, GCP and other modern technologies to architect, design and implement robust solutions. Our GPUs can handle large datasets efficiently, making them suitable for big data analytics, machine learning, and scientific simulations.

Esolvit completed a comprehensive proof-of- concept (POC) to demonstrate the feasibility and benefits of automated metadata generation and Gen AI-based search capabilities. Our approach involved leveraging advanced computer vision, natural language processing (NLP), and large language models (LLMs) to extract meaningful insights from visual content. We utilize LLMs to develop advanced NLP applications, such as sentiment analysis, text summarization, and machine translation. We perform GPU-accelerated computer vision algorithms power applications like image recognition, object detection, and video analysis.

Our team will assess your existing infrastructure and recommend the most suitable AI tools and platforms based on your needs. We will determine the right architecture and infrastructure depending on the use cases and will set that up depending on NCTCOG needs. Example: For a retail client, we identified their existing infrastructure was insufficient for computer vision models. We recommend a hybrid cloud solution with GPU-accelerated computing instances to ensure optimal performance.

# c. Experience with AI ethics, data privacy, and security, particularly in a public sector context.

Esolvit holds certifications from the International Organization for Standardization ISO 20000-1:2018, and ISO 27001:2022 all of which exemplify our commitment to quality and security and specifically for the scope of service in AI software development and cybersecurity, further highlighting our dedication to excellence in these critical domains.

We have collaborated with other organizations and government agencies to establish ethical AI practices and adhere to strict data privacy regulations. AI-driven personalization tools enabled us to tailor our services to the specific needs of each client, enhancing customer satisfaction. These guidelines addressed data privacy and security measures to protect sensitive information used in AI models. We reviewed data privacy and security policies and procedures to identify potential risks and vulnerabilities associated with data sharing and storage and ensured seamless integration with Multi-Cloud Managed Services and Security Services. We perform ongoing Support, maintenance, regular updates and security patches to ensure the latest features and protection against vulnerabilities.

*d. Proven success in developing AI strategies and roadmaps, including successful project implementation.* Esolvit provided strategic planning and AI advisory support to craft a forward-looking AI strategy for various organizations. As AI experts, we supported POCs and pilots, ensuring they are scalable and meet organizational objectives. We developed a comprehensive AI strategy addressing governance, ethics, and integration and established an innovation lab for rapid idea testing with enthusiastic participants. Our machine learning and neural network-based anomaly detection tools improve file processing efficiency by identifying and resolving anomalies.

Esolvit AI Readiness Assessments (ARA) are in line with the U.S. Department of Commerce's National Institute of Standards and Technology AI Framework. The AI framework refers to an AI system as an engineered or machine-based system that can, for a given set of objectives, generate outputs such as predictions, recommendations, or decisions influencing real or virtual environments. We tailored AI Roadmap to develop a customized strategy outlining the next steps for successful AI adoption.

# e. Ability to work collaboratively with internal teams and translate technical concepts into layman's terms for non-technical stakeholders.

Esolvit is dedicated to delivering exceptional customer service, focusing on proactive issue management, efficient escalation procedures, and transparent communication. Esolvit is committed to supporting NCTCOG entities with high-quality, responsive services. We encourage open and transparent communication among team members and stakeholders. Our vendor management platform enhances visibility, tracks performance, and provides real-time analytics for NCTCOG participating entities. This

platform will be an invaluable tool for NCTCOG, allowing seamless communication, comprehensive performance tracking, and efficient resource allocation. We prioritize clear communication with clients, offering online sessions to guide them through software changes before major releases. We assign a dedicated account manager to each client to ensure seamless communication and support and maintain open communication channels to keep stakeholders informed and address any issues promptly.

# f. Demonstrated understanding and experience with public sector compliance and ethical standards.

Esolvit established a robust AI governance framework, including ethical guidelines and risk assessment and ensuring data quality, accuracy, and completeness. We developed clear ethical guidelines for AI development and use, covering issues like fairness, transparency, accountability, and privacy and conducted regular audits to assess the performance, effectiveness, and ethical implications of AI systems.

# **5.3.2 Data Security and Privacy Compliance**

# a. The consultant must comply with all applicable federal, state, and local data privacy laws.

To ensure NCTCOG's participating entities AI project complies with all applicable federal, state, and local data privacy laws, at Esolvit, we conduct a comprehensive assessment to identify applicable laws and determine which specific laws (e.g., GDPR, CCPA, etc.) apply to client's project based on the type of data, geographic location, and industry. We classify data based on sensitivity levels to determine the appropriate level of protection and provide data access to only authorized people. We also analyze how the AI will process and utilize data to identify potential privacy risks.

b. Provide documentation that AI solutions will adhere to data protection regulations such as GDPR (if applicable) or equivalent local laws. c. Implement security measures to ensure the protection of sensitive and personal information during data processing.

Here is the response for points b and c. Refer to 5.2.3(e) for more information on the response to this.

Esolvit ensures that AI solutions comply with data protection regulations such as GDPR and equivalent local laws through comprehensive documentation. This includes outlining the responsibilities of all parties involved in data processing, specifying the purpose and categories of personal data, and implementing robust security measures like encryption, access controls, and intrusion detection systems. To further enhance security, Esolvit conducts regular penetration testing to identify and mitigate vulnerabilities in systems, networks, and applications, supported by detailed reports and actionable recommendations.

Esolvit also documents data retention and deletion policies, incident response procedures, and privacy policies to ensure transparency in how personal data is collected, used, and protected. Accessibility is prioritized through 508 compliance testing, which evaluates websites, applications, and digital content for ensuring usability. Additionally, Esolvit incorporates performance testing, secure coding practices, and vulnerability assessments to address potential security risks, delivering reliable, secure, and inclusive AI solutions. These are some of the differentiating factors we bring to this proposal.

Esolvit provides documentation for all the processes to ensure AI solutions compliance with data protection regulations like GDPR or equivalent local laws. Esolvit clearly outlines the responsibilities and obligations of all parties involved in data processing in a document which contains description of the parties involved and their roles, Purpose of data processing, the categories of personal data to be processed, data security measures to be implemented, data retention and deletion policies and incident response procedures. Esolvit establishes and documents a privacy policy to inform individuals about how their personal data is collected, used, shared, and protected. Esolvit facilitates technical documentation with detailed information about the technical implementation of the AI solution which includes data flow diagrams, data security measures, such as encryption, access controls, and intrusion detection systems.

# **Cybersecurity & Penetration Testing Services**

Esolvit specializes in advanced penetration testing to secure IT infrastructures. Our ethical hackers utilize industry-leading tools and techniques to simulate real-world cyberattacks, identify vulnerabilities, and strengthen defenses to minimize security risks.

- **Vulnerability Assessment Tools:** Comprehensive testing with Nessus, QualysGuard, Nmap, Wireshark, Burp Suite, OWASP ZAP, Acunetix, AWS CloudTrail, and more.
- **Network Security Testing:** Internal and external networks, wireless systems, firewalls, VPNs, and regulatory compliance (ISO 27001, PCI DSS, HIPAA, GDPR). Simulations include malware, ransomware, and DDoS attacks.
- Web Application Testing: Static and dynamic analysis, SQL injection, XSS, CSRF, and broken authentication testing.
- **Mobile Application Security:** Complete assessments for Android/iOS apps, including network security, data protection, authentication, and third-party dependencies.
- **Cloud Security Testing:** Evaluation of cloud-hosted infrastructures, APIs, access management, and data protection.
- **API Security Testing:** Real-world threat simulations, OWASP API security checks, and breach prevention strategies.

Esolvit's unmatched expertise in project management, AI/ML, psychometrics, real-time analytics, DevOps, and cybersecurity ensures innovative, scalable, and secure solutions that drive business success.

# **5.3.3 Project Management and Reporting**

a. The consultant must provide regular project status updates and attend weekly or bi-weekly meetings with the organization's project management team. b. Submit a detailed final report summarizing findings, recommendations, implementation results, and lessons learned. c. Adhere to agreed project deadlines and deliver all required documentation in a timely manner.

Esolvit is dedicated to supporting NCTCOG's participating entities with high-quality, responsive services. Our vendor management platform enhances visibility, tracks performance, and provides real-time analytics, enabling clients to access data and reports on project status, resource allocation, and financial performance, supporting informed decision-making. We foster open communication with stakeholders through regular updates, meetings to track progress, address challenges, and coordinate efforts. Additionally, each client is assigned a dedicated account manager to ensure seamless communication and personalized support to ensure efficient and iterative project delivery.

Esolvit follows Agile and Scrum methodologies to ensure efficient and iterative project delivery. We conduct daily stand-up meetings, maintain clear milestones, and prioritize collaboration and adaptability. At the end of scrums, we conduct retrospective meetings and create learnings, which will be incorporated into the next iteration. Our team holds Scrum certifications, ensuring a structured approach with iterative development, clear milestones, and realistic timelines. We prioritize timely responses to keep projects on track, addressing any issues promptly. At the conclusion of each project, we provide a comprehensive final report summarizing findings, recommendations, implementation results, and lessons learned. This report includes tailored roadmaps for customized AI strategies aligned with business objectives and detailed implementation plans for AI initiatives. Recommendations for scaling successful solutions are also provided.

# 5.3.4 Budget and Cost Estimates

a. Provide a comprehensive cost breakdown for the services, including consultancy fees, software licensing costs (if applicable), and any other anticipated expenses. b. Offer flexible pricing structures, such as time and materials or fixed-price contracts, depending on the scope of work.

The following response addresses points and b.

Esolvit has a proven track record of delivering high-quality, cost-effective solutions. We provide costeffective solutions to meet your budget constraints. Using advanced analytics, we identify cost-saving opportunities and optimize resource allocation for efficient project management. We will develop the AI strategy by assessing the current AI capabilities, identifying priority applications for AI use, recommending a governance and stakeholder engagement framework, and develop a plan. Our consultancy fees are based on hourly rates for various roles, such as project managers, data scientists, AI engineers, and data analysts. If specific AI tools or platforms are required, we will include the associated licensing fees based on usage and the scale of implementation. This pricing model will depend on the specific project requirements covering all deliverables, milestones, and expenses outlined in the project scope.

We have attached our pricing sheet for reference.

# 5.3.5 Data Strategy and Management

The consultant must ensure all AI solutions developed under this engagement align with best practices in data strategy and management to maintain the quality, governance, privacy, and security of data.

a. Data Quality Controls: 1. The consultant must implement measures to ensure the integrity and accuracy of data utilized in AI models. 2. Establish data validation processes to identify and address inaccuracies or inconsistencies. 3. Define data enrichment procedures to enhance dataset quality.

Provided below are the responses to points (a 1 to 3):

Esolvit recognizes data as a strategic asset for successful AI implementations. Our data preparation process encompasses data collection and ingestion from diverse sources, rigorous cleaning and preprocessing, and seamless data integration and enrichment. We prioritize data quality through robust validation, profiling, and governance, employing data quality metrics and leveraging data profiling tools such as **Databricks**, **DataRobot** and **Alteryx**. Furthermore, we leverage AI-powered techniques such as automated anomaly detection, missing value imputation, and feature engineering to enhance efficiency, improve data quality, and reduce bias. By employing these advanced methods and adhering to rigorous quality control measures, we ensure that our AI models are trained on high-quality, reliable data, leading to accurate and robust predictions and ultimately driving successful AI outcomes.

# b. Data Governance Framework:

1. Outline a comprehensive governance strategy that includes policies for data ownership, usage rights, and data stewardship roles. 2. The consultant should facilitate compliance with public sector regulations by providing clear governance documentation. 3. Define processes for version control and data lineage tracking to maintain transparency in data handling.

Provided below is the response for the points b(1,2,3)

Esolvit prioritizes a robust data governance framework to ensure the integrity, security, and ethical use of data. We establish and enforce comprehensive policies that address data retention, security, and privacy, ensuring strict adherence to relevant regulations such as GDPR and CCPA. Clear data ownership and responsibilities are assigned for each dataset, and robust access controls are implemented to limit data access to authorized personnel. We define and enforce secure data sharing protocols, considering the sensitivity and confidentiality of information. To enhance data traceability and facilitate effective data management, we meticulously document data lineage, tracking its origin, transformation, and usage throughout its lifecycle.

Furthermore, we utilize a centralized data repository with a robust version control system to ensure data integrity and facilitate efficient collaboration. Regular audits and ongoing employee training on data privacy and security further strengthen our commitment to responsible data management.

c. Data Privacy Assurance: 1. Ensure adherence to data privacy laws, including GDPR (if applicable) or relevant local legislation. 2. Propose methodologies for anonymizing and protecting sensitive information throughout the AI model lifecycle. 3. Create a protocol for obtaining and managing data consent where necessary.

d. Data Security Protocols: 1. Implement and recommend data security measures, including encryption, access controls, and risk assessment practices. 2. Develop a response plan for data breaches or security incidents, specifying consultant responsibilities in these cases. 3. Ensure secure data storage and backup practices are followed, protecting against data loss.

Below is the response for points c and d (1,2,3).

Esolvit adheres to GDPR and other relevant public sector regulations, prioritizing data privacy and security in all aspects of AI development and deployment. We recognize the importance of transparency in AI systems that process personal data, particularly ensuring that individuals have the right to access and rectify their personal information (PII), taking and managing consent for storing individual related personal data. To mitigate privacy risks, we conduct comprehensive data protection impact assessments, which include a detailed description of the AI system's intended use, identification of potential risks to individuals' rights, and proposed measures to mitigate these risks. These measures include data minimization, anonymization, and encryption techniques. Esolvit's approach to ethical AI practices is grounded in strong data privacy regulations, and we assist in developing robust policies and guidelines to ensure compliance with these standards.

Additionally, Esolvit strengthens security and compliance by implementing rigorous cybersecurity measures to protect sensitive information and ensure data integrity. Our endpoint security solution, which is designed to prevent ransomware attacks including screen-locking and encrypting ransomware includes up-to-date operating systems, the prohibition of software installations from untrusted sources, and real-time antivirus protection. We emphasize secure data backups, regularly backing up critical files in encrypted locations to mitigate the potential impact of attacks.

Esolvit's commitment to data privacy and security extends to every phase of AI solution development. We use encryption, anonymization, and strict data governance protocols to protect sensitive information, while ensuring compliance with GDPR and other industry standards. Our cybersecurity services include antiransomware, antivirus, and identity protection measures to safeguard personal data. Additionally, we maintain secure data storage and backup practices, employing encryption methods, redundant systems, and regular backups. Esolvit holds certification from the Department of Defense (DoD) Cybersecurity Procurement Workshop, further demonstrating our expertise in cybersecurity and commitment to safeguarding critical data. This is another key differentiating factor from Esolvit, to enable secure AI implementations.

# e. Ongoing Data Strategy Evaluation: 1. Include a plan for periodic evaluation and updates to the data strategy to adapt to new regulatory changes and technological advancements.

Esolvit recognizes the dynamic nature of data management and emphasizes a continuous improvement approach. We conduct regular evaluations of our data strategy, assessing performance, monitoring regulatory compliance (including GDPR and CCPA), and reviewing emerging technologies. These evaluations identify areas for improvement, such as addressing data quality issues, adapting to new business objectives, and responding to regulatory changes. Based on these findings, we develop and implement a comprehensive update plan, including policy revisions, technology upgrades, and employee training. This iterative process ensures that our data strategy remains aligned with evolving business needs and regulatory requirements, maximizing its effectiveness and value.

2. Offer training or workshops for internal teams to manage and uphold the organization's data strategy post-consultation.

Please Refer to section 5.2.5(a,b,c) response for the following information.

# **5.3.6 Ethical AI Requirements**

The consultant must ensure that all AI solutions adhere to the organization's ethical principles, promoting fairness, transparency, accountability, and proactive bias mitigation.

a. Ethical Framework Alignment: 1. The consultant must outline how proposed AI solutions align with industry-standard ethical guidelines and the organization's specific principles. 2. Define the consultant's approach to integrating fairness and inclusiveness into AI development to avoid discrimination or biased outputs. Here is the response for the point a(1,2)

Esolvit ensures to adhere to industry-standard ethical guidelines and the organization's specific principles. Ensure the training data is diverse and representative to avoid biases in the AI model's outputs and use techniques to identify and mitigate biases in the data and algorithms. Establish a process for regularly reviewing and updating the AI solution to maintain ethical standards and incorporate ethical principles into the design and development process. We develop models that can be understood and explained, enhancing trust and accountability.

We make the AI model's decision-making process transparent and understandable and take feedback from users and stakeholders from various backgrounds to ensure their needs and concerns are addressed to improve the model's fairness and inclusivity. We will ensure that our solutions are specifically designed to mitigate bias, foster inclusivity, and promote equitable outcomes for all stakeholders.

b. Bias Detection and Mitigation: 1. Establish methods for identifying and reducing bias in training data and algorithms. 2. Propose ongoing monitoring techniques to track bias throughout the deployment and operation of the AI system. c. Transparency Protocols: 1. Ensure AI models are understandable, with details on how decisions are made available to relevant stakeholders. 2. Include a documentation process that provides insight into data sources, decision logic, and model outputs.

Here is the response for the points b(1,2) and c(1,2)

Our AI solutions are designed to be transparent, fair, and unbiased. Our Bias mitigation strategies ensure fairness and inclusivity in AI development and deployment.

Here are some methods we use to identify and mitigate bias: We perform data audits to ensure data is representative of the population the model will serve and check for consistent and unbiased labeling of data. We evaluate model performance across different demographic groups and examine which features the model relies on heavily and if they introduce bias. Analyze the types of errors the model makes to identify patterns of bias. We will perform comprehensive data cleaning by removing noise, inconsistencies, and biases to enhance data quality and reliability. Additionally, we will conduct precise and unbiased data labeling to ensure the dataset is well-prepared for training and validating AI models effectively. We adhere to ethical guidelines and principles and make the model's decision-making process transparent. We regularly monitor AI systems for bias and take corrective actions to ensure their reliability.

To maintain the integrity of AI systems, it's crucial to implement robust monitoring techniques. Here are some effective methods we follow:

- Data Monitoring to Identify if the model is amplifying biases present in the data and continuously track performance metrics and monitor fairness metrics like demographic parity, equalized odds, and predictive parity. Analyze the types of errors the model makes to identify patterns of bias.
- Establish ethical review boards to oversee AI development and deployment and ensure diverse teams are involved in the development and maintenance of AI systems.
- Maintain transparency about the model's limitations and potential biases.
- Utilize automated tools to monitor data, model performance, and user feedback.
- Involve human experts to review and interpret the results of automated monitoring.

We maintain open communication channels to keep stakeholders informed and address any issues promptly. We ensure that our model's capabilities and limitations are presented clearly and concisely, allowing for full transparency. Regular updates on the model's performance and any changes in its behavior are provided to stakeholders to ensure they remain informed of any adjustments or improvements. Additionally, we design user interfaces that effectively communicate the model's decisions, incorporating interactive visualizations to help users understand the model's behavior and identify potential biases. We also generate natural language explanations of the model's decisions, making it easier for users to interpret the results and ensure alignment with organizational goals and ethical standards.

We provide real-time insights, giving NCTCOG's participating entities immediate access to data and reports on project status, resource allocation, and financial performance, empowering them to make more informed decisions. Additionally, we ensure full transparency in our data management by clearly documenting the origin of the data, including any external sources or internal databases, and specifying the data collection methods, sampling techniques, and any data cleaning or preprocessing steps.

# d. Accountability Measures: 1. Define accountability measures for AI development and use, including tracking actions, decisions, and changes to the model. 2. Propose mechanisms for auditing AI solutions to ensure continued compliance with ethical standards. Here is the response for the points d(1,2)

Esolvit follows these key strategies to track actions, decisions, and changes to AI models: We provide detailed documentation to track the origin, processing, and storage of data used to train and test the model and record the decisions made during the development and deployment process, including reasons for specific choices. We maintain a detailed record of changes made to the model, data, or deployment environment. We implement a version control system to track different versions of the model and their associated code and maintain versions of the training and testing data to facilitate reproducibility and

analysis. We adhere to a comprehensive ethical framework for AI development and use and ensure compliance with relevant regulations and industry standards. We design systems that allow for human intervention and oversight, especially in critical decision-making processes.

e. Impact Assessments: 1. Include plans for conducting regular ethical impact assessments to evaluate potential societal, cultural, and operational impacts. 2. Provide a framework for addressing findings from these assessments with corrective actions when needed.

Here is the response for the points e(1,2)

Esolvit prioritizes responsible AI development and deployment. We conduct regular ethical impact assessments to evaluate potential societal, cultural, and operational impacts, including bias, privacy, and accountability. We continuously monitor AI systems for bias and implement corrective actions based on a rigorous framework that includes root cause analysis, detailed action plans, and thorough follow-up. This approach ensures that AI is developed and used responsibly.

# **5.4 DELIVERABLES**

Deliverables include, but are not limited to, the following: a. Initial AI Strategy Report. b. Feasibility Study with AI Use Case Recommendations, including a detailed data strategy component. c. 5-Year AI Roadmap alongside a detailed AI Implementation Plan. d. Pilot Implementation Plan. e. Staff training Sessions and Knowledge Transfer Plan and Materials. f. Detailed documentation on ethical AI guidelines and measures incorporated. g. Final Project Report, including project evaluation, outcomes, and recommendations for further AI integration.

Here is the response for the points (a to g)

Esolvit possesses the expertise and experience to effectively guide NCTCOG's participating entities in their AI journey. We will deliver a comprehensive suite of services, including the development of customized AI strategies, the identification and prioritization of high-impact use cases, and the creation of 5-year roadmaps with phased implementation plans. Our team will lead the implementation of pilot projects, ensuring rigorous data preparation, robust model development, and thorough evaluation. We will provide comprehensive training programs to build internal AI expertise and foster a culture of AI-driven innovation within each participating entity.

Furthermore, we will establish a robust ethical AI framework, incorporating bias mitigation techniques and robust data privacy measures to ensure responsible AI development and deployment. Finally, we will provide comprehensive reports summarizing findings, recommendations, and lessons learned throughout the entire AI journey, ensuring transparency and continuous improvement.

# **5.8 WARRANTY/GUARANTEE**

Please state in your proposal what warranty or guarantee may apply to the goods or services you are proposing.

Supplier warrants that all Equipment, Products, and Services furnished are free from liens and encumbrances, and are free from defects in design, materials, and workmanship. In addition, Supplier warrants the Equipment, Products, and Services are suitable for and will perform in accordance with the ordinary use for which they are intended. Supplier agrees to assist the NCTCOG's participating entities in reaching a resolution in any dispute over warranty terms with the manufacturer. Any manufacturer's warranty that extends beyond the expiration of the supplier's warranty will be passed on to the participating entity.

# ATTACHMENT I: INSTRUCTIONS FOR PROPOSALS COMPLIANCE AND SUBMITTAL

# **Compliance with the Solicitation**

Submissions must be in strict compliance with this solicitation. Failure to comply with all provisions of the solicitation may result in disqualification.

# Compliance with the NCTCOG Standard Terms and Conditions

By signing its submission, Offeror acknowledges that it has read, understands and agrees to comply with the NCTCOG standard terms and conditions.

# Acknowledgment of Insurance Requirements

By signing its submission, Offeror acknowledges that it has read and understands the insurance requirements for the submission. Offeror also understands that the evidence of required insurance must be submitted within ten (10) working days following notification of its offer being accepted; otherwise, NCTCOG may rescind its acceptance of the Offeror's proposals. The insurance requirements are outlined in Section 2.2 - General Terms and Conditions.

Name of Organization/Contractor(s):

Esolvit, Inc.

Signature of Authorized Representative:

Bushavani

# **ATTACHMENT II: CERTIFICATIONS OF OFFEROR**

I hereby certify that the information contained in this proposal and any attachments is true and correct and may be viewed as an accurate representation of proposed services to be provided by this organization. I certify that no employee, board member, or agent of the North Central Texas Council of Governments has assisted in the preparation of this proposal. I acknowledge that I have read and understand the requirements and provisions of the solicitation and that the organization will comply with the regulations and other applicable local, state, and federal regulations and directives in the implementation of this contract.

I also certify that I have read and understood all sections of this solicitation and will comply with all the terms and conditions as stated; and furthermore that I, Usha Boddapu (typed or printed name) certify that I am the CEO/Founder (title) of the corporation, partnership, or sole proprietorship, or other eligible entity named as offeror and respondent herein and that I am legally authorized to sign this offer and to submit it to the North Central Texas Council of Governments, on behalf of said offeror by authority of its governing body.

Name of Organization/Contractor(s):

Esolvit, Inc.

Signature of Authorized Representative:

Bushavani

# ATTACHMENT III: CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS

This certification is required by the Federal Regulations Implementing Executive Order 12549, Debarment and Suspension, 45 CFR Part 93, Government-wide Debarment and Suspension, for the Department of Agriculture (7 CFR Part 3017), Department of Labor (29 CFR Part 98), Department of Education (34 CFR Parts 85, 668, 682), Department of Health and Human Services (45 CFR Part 76).

The undersigned certifies, to the best of his or her knowledge and belief, that both it and its principals:

- 1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency;
- 2. Have not within a three-year period preceding this contract been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or Local) transaction or contract under a public transaction, violation of federal or State antitrust statues or commission of embezzlement, theft, forgery, bribery, falsification, or destruction of records, making false Proposals, or receiving stolen property;
- 3. Are not presently indicated for or otherwise criminally or civilly charged by a government entity with commission of any of the offense enumerated in Paragraph (2) of this certification; and,
- 4. Have not within a three-year period preceding this contract had one or more public transactions terminated for cause or default.

Where the prospective recipient of federal assistance funds is unable to certify to any of the qualifications in this certification, such prospective recipient shall attach an explanation to this certification form.

Name of Organization/Contractor(s):

Esolvit, Inc.

Signature of Authorized Representative:

# ATTACHMENT V: DRUG-FREE WORKPLACE CERTIFICATION

The Esolvit, Inc. (company name) will provide a Drug Free Work Place in compliance with the Drug Free Work Place Act of 1988. The unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited on the premises of the Esolvit, Inc. (company name) or any of its facilities. Any employee who violates this

Esolvit, Inc. (company name) or any of its facilities. Any employee who violates this prohibition will be subject to disciplinary action up to and including termination. All employees, as a condition of employment, will comply with this policy.

# CERTIFICATION REGARDING DRUG-FREE WORKPLACE

This certification is required by the Federal Regulations Implementing Sections 5151-5160 of the Drug-Free Workplace Act, 41 U.S.C. 701, for the Department of Agriculture (7 CFR Part 3017), Department of Labor (29 CFR Part 98), Department of Education (34 CFR Parts 85, 668 and 682), Department of Health and Human Services (45 CFR Part 76).

The undersigned subcontractor certifies it will provide a drug-free workplace by:

Publishing a policy Proposal notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the workplace and specifying the consequences of any such action by an employee;

Establishing an ongoing drug-free awareness program to inform employees of the dangers of drug abuse in the workplace, the subcontractor's policy of maintaining a drug-free workplace, the availability of counseling, rehabilitation and employee assistance programs, and the penalties that may be imposed on employees for drug violations in the workplace;

Providing each employee with a copy of the subcontractor's policy Proposal;

Notifying the employees in the subcontractor's policy Proposal that as a condition of employment under this subcontract, employees shall abide by the terms of the policy Proposal and notifying the subcontractor in writing within five days after any conviction for a violation by the employee of a criminal drug abuse statue in the workplace;

Notifying the Board within ten (10) days of the subcontractor's receipt of a notice of a conviction of any employee; and,

Taking appropriate personnel action against an employee convicted of violating a criminal drug statue or requires such employee to participate in a drug abuse assistance or rehabilitation program.

Name of Organization/Contractor(s):

Esolvit, Inc.

Signature of Authorized Representative:

Bushavani
#### ATTACHMENT IV: RESTRICTIONS ON LOBBYING

Section 319 of Public Law 101-121 prohibits recipients of federal contracts, grants, and loans exceeding \$100,000 at any tier under a federal contract from using appropriated funds for lobbying the Executive or Legislative Branches of the federal government in connection with a specific contract, grant, or loan. Section 319 also requires each person who requests or receives a federal contract or grant in excess of \$100,000 to disclose lobbying.

No appropriated funds may be expended by the recipient of a federal contract, loan, or cooperative agreement to pay any person for influencing or attempting to influence an officer or employee of any federal executive department or agency as well as any independent regulatory commission or government corporation, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered federal actions: the awarding of any federal contract, the making of any federal grant, the making of any federal loan the entering into of any cooperative agreement and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.

As a recipient of a federal grant exceeding \$100,000, NCTCOG requires its subcontractors of that grant to file a certification, set forth in Appendix B.1, that neither the agency nor its employees have made, or will make, any payment prohibited by the preceding paragraph.

Subcontractors are also required to file with NCTCOG a disclosure form, set forth in Appendix B.2, if the subcontractor or its employees have made or have agreed to make any payment using nonappropriated funds (to <u>include</u> profits from any federal action), which would be prohibited if paid for with appropriated funds.

#### LOBBYING CERTIFICATION FOR CONTRACTS, GRANTS, LOANS, AND COOPERATIVE AGREEMENTS

The undersigned certifies, to the best of his or her knowledge or belief, that:

- 1. No federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an officer or employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal loan, the entering into of any cooperative Contract, and the extension, continuation, renewal, amendment, or modification or any federal contract, grant, loan, or cooperative contract; and
- 2. If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this federal contract, grant, loan, and or cooperative contract, the undersigned shall complete and submit Standard Form LLL, "Disclosure Form to Report Lobbying", in accordance with the instructions.
- 3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers and that all sub-recipients shall certify accordingly.

Name of Organization/Contractor(s):

# Esolvit, Inc.

Signature of Authorized Representative:

<sub>Date:</sub> 01/09/2025

#### ATTACHMENT VII: CERTIFICATION OF FAIR BUSINESS PRACTICES

That the submitter has not been found guilty of unfair business practices in a judicial or state agency administrative proceeding during the preceding year. The submitter further affirms that no officer of the submitter has served as an officer of any company found guilty of unfair business practices in a judicial or state agency administrative during the preceding year.

Name of Organization/Contractor(s):

# Esolvit, Inc.

Signature of Authorized Representative:

Date: 01/09/2025

#### ATTACHMENT VIII: CERTIFICATION OF GOOD STANDING TEXAS CORPORATE FRANCHISE TAX CERTIFICATION

Pursuant to Article 2.45, Texas Business Corporation Act, state agencies may not contract with for profit corporations that are delinquent in making state franchise tax payments. The following certification that the corporation entering into this offer is current in its franchise taxes must be signed by the individual authorized on Form 2031, Corporate Board of Directors Resolution, to sign the contract for the corporation.

The undersigned authorized representative of the corporation making the offer herein certified that the following indicated Proposal is true and correct and that the undersigned understands that making a false Proposal is a material breach of contract and is grounds for contract cancellation.

Indicate the certification that applies to your corporation:



The Corporation is a for-profit corporation and certifies that it is not delinquent in its franchise tax payments to the State of Texas.



The Corporation is a non-profit corporation or is otherwise not subject to payment of franchise taxes to the State of Texas.

Type of Business (if not corporation):

Sole Proprietor
Partnership
Other

Pursuant to Article 2.45, Texas Business Corporation Act, the North Central Texas Council of Governments reserves the right to request information regarding state franchise tax payments.

# Usha Boddapu - CEO/Founder

(Printed/Typed Name and Title of Authorized Representative)

B.vohavani

Signature

Date: 01/09/2025

#### ATTACHMENT X: NCTCOG FEDERAL AND STATE OF TEXAS REQUIRED PROCUREMENT PROVISIONS

# The following provisions are mandated by Federal and/or State of Texas law. Failure to certify to the following will result in disqualification of consideration for contract. Entities or agencies that are not able to comply with the following will be ineligible for consideration of contract award.

#### PROHIBITED TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT CERTIFICATION

This Contract is subject to the Public Law 115-232, Section 889, and 2 Code of Federal Regulations (CFR) Part 200, including §200.216 and §200.471, for prohibition on certain telecommunications and video surveillance or equipment. Public Law 115-232, Section 889, identifies that restricted telecommunications and video surveillance equipment or services (e.g., phones, internet, video surveillance, cloud servers) include the following:

- A) Telecommunications equipment that is produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliates of such entities).
- B) Video surveillance and telecommunications equipment produced by Hytera Communications Corporations, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliates of such entities).
- C) Telecommunications or video surveillance services used by such entities or using such equipment.
- D) Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, Director of the National Intelligence, or the Director of the Federal Bureau of Investigation reasonably believes to be an entity owned or controlled by the government of a covered foreign country. The entity identified below, through its authorized representative, hereby certifies that no funds under this Contract will be obligated or expended to procure or obtain telecommunication or video surveillance services or equipment or systems that use covered telecommunications equipment or services as a substantial or essential component of any system, or as a critical technology as part of any system prohibited by 2 CFR §200.216 and §200.471, or applicable provisions in Public Law 115-232 Section 889.

The Contractor or Subrecipient hereby certifies that it does comply with the requirements of 2 CFR §200.216 and §200.471, or applicable regulations in Public Law 115-232 Section 889.

SIGNATURE OF AUTHORIZED PERSON:	Bushasam
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NAME OF COMPANY:	Û-± <sup>a</sup> ·ô×1⁄ô
DATE:	ðï nðçniði ë
	-OR-

The Contractor or Subrecipient hereby certifies that it cannot comply with the requirements of 2 CFR §200.216 and §200.471, or applicable regulations in Public Law 115-232 Section 889.

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	•••••						

NAME OF AUTHORIZED PERSON:

NAME OF COMPANY:

DATE:

#### DISCRIMINATION AGAINST FIREARMS ENTITIES OR FIREARMS TRADE ASSOCIATIONS

This contract is subject to the Texas Local Government Code chapter 2274, Subtitle F, Title 10, prohibiting contracts with companies who discriminate against firearm and ammunition industries.

TLGC chapter 2274, Subtitle F, Title 10, identifies that "discrimination against a firearm entity or firearm trade association" includes the following:

A) means, with respect to the entity or association, to:

- I. refuse to engage in the trade of any goods or services with the entity or association based solely on its status as a firearm entity or firearm trade association; and
- II. refrain from continuing an existing business relationship with the entity or association based solely on its status as a firearm entity or firearm trade association; or
- III. terminate an existing business relationship with the entity or association based solely on its status as a firearm entity or firearm trade association.
- B) An exception to this provision excludes the following:
  - I. contracts with a sole-source provider; or
  - II. the government entity does not receive bids from companies who can provide written verification.

The entity identified below, through its authorized representative, hereby certifies that they have no practice, policy, guidance, or directive that discriminates against a firearm entity or firearm trade association; and that they will not discriminate during the term of the contract against a firearm entity or firearm trade association as prohibited by Chapter 2274, Subtitle F, Title 10 of the Texas Local Government Code.

# The Contractor or Subrecipient hereby certifies that it does comply with the requirements of Chapter 2274, Subtitle F, Title 10.

SIGNATURE OF AUTHORIZED PERSON:	Bushavan
NAME OF AUTHORIZED PERSON:	Ë- ` ز Þ±¼⁄ஆ° «
NAME OF COMPANY:	Û-± <sup>′a</sup> ô⊀1∕ô
DATE:	ïñçñì

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The Contractor or Subrecipient hereby certifies that it cannot comply with the requirements of Chapter 2274, Subtitle F, Title 10.

SIGNATURE OF AUTHORIZED PERSON:

NAME OF AUTHORIZED PERSON:	
NAME OF COMPANY:	
DATE:	

#### **BOYCOTTING OF CERTAIN ENERGY COMPANIES**

This contract is subject to the Texas Local Government Code chapter 809, Subtitle A, Title 8, prohibiting contracts with companies who boycott certain energy companies.

TLGC chapter Code chapter 809, Subtitle A, Title 8, identifies that "boycott energy company" means, without an ordinary business purpose, refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations with a company because the company:

- I. engages in the exploration, production, utilization, transportation, sale, or manufacturing of fossil fuelbased energy and does not commit or pledge to meet environmental standards beyond applicable federal and state law; and
- II. does business with a company described by paragraph (I).

The entity identified below, through its authorized representative, hereby certifies that they do not boycott energy companies, and that they will not boycott energy companies during the term of the contract as prohibited by Chapter 809, Subtitle A, Title 8 of the Texas Local Government Code.

The Contractor or Subrecipient hereby certifies that it does comply with the requirements of Chapter 809, Subtitle A, Title 8.

SIGNATURE OF AUTHORIZED PERSON:	Bushavani
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NAME OF COMPANY:	Û-± <sup>′a</sup> ô*1⁄ô
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-OR-

□ The Contractor or Subrecipient hereby certifies that it cannot comply with the requirements of Chapter 809, Subtitle A, Title 8.

#### SIGNATURE OF AUTHORIZED PERSON:

NAME OF AUTHORIZED PERSON:

NAME OF COMPANY:

DATE:

#### ATTACHMENT VI: DISCLOSURE OF CONFLICT OF INTEREST CERTIFICATION REGARDING DISCLOSURE OF CONFLICT OF INTEREST

The undersigned certifies that, to the best of his or her knowledge or belief, that:

"No employee of the contractor, no member of the contractor's governing board or body, and no person who exercises any functions or responsibilities in the review or approval of the undertaking or carrying out of this contract shall participate in any decision relating to this contract which affects his/her personal pecuniary interest.

Executives and employees of contractor shall be particularly aware of the varying degrees of influence that can be exerted by personal friends and associates and, in administering the contract, shall exercise due diligence to avoid situations which give rise to an assertion that favorable treatment is being granted to friends and associates. When it is in the public interest for the contractor to conduct business with a friend or associate of an executive or employee of the contractor, an elected official in the area or a member of the North Central Texas Council of Governments, a permanent record of the transaction shall be retained.

Any executive or employee of the contractor, an elected official in the area or a member of the NCTCOG, shall not solicit or accept money or any other consideration from a third person, for the performance of an act reimbursed in whole or part by contractor or Department. Supplies, tools, materials, equipment or services purchased with contract funds shall be used solely for purposes allowed under this contract. No member of the NCTCOG shall cast a vote on the provision of services by that member (or any organization which that member represents) or vote on any matter which would provide a direct or indirect financial benefit to the member or any business or organization which the member directly represents".

No officer, employee or paid consultant of the contractor is a member of the NCTCOG.

No officer, manager or paid consultant of the contractor is married to a member of the NCTCOG.

No member of NCTCOG directly owns, controls or has interest in the contractor.

The contractor has disclosed any interest, fact, or circumstance that does or may present a potential conflict of interest.

No member of the NCTCOG receives compensation from the contractor for lobbying activities as defined in Chapter 305 of the Texas Government Code.

Should the contractor fail to abide by the foregoing covenants and affirmations regarding conflict of interest, the contractor shall not be entitled to the recovery of any costs or expenses incurred in relation to the contract and shall immediately refund to the North Central Texas Council of Governments any fees or expenses that may have been paid under this contract and shall further be liable for any other costs incurred or damages sustained by the NCTCOG as it relates to this contract.

Name of Organization/Contractor(s):

Esolvit, Inc.

Signature of Authorized Representative:

Date: 01/09/2025

Interpretendent ereiters changes made to the law by H.B. 23, 84h Leg., Regular Session.       OFFICE USE ONLY         This questionnare is being field in accordance with Chagler 176, Local Government Code, by a vendor with an incremental entity and the accordance with the accord by Section 175.005(a).       Date Received         The Units of the Code of the Code (Code (Code of the Code (Code (C	CONFLICT OF INTEREST QUESTIONNAIRE For vendor doing business with local governmental entity	FORM CIQ
bits questionnaire is being filed in accordance with Chapter 175, Local Government Code, by a vendor who as a business relationship as defined by Section 176.005(1), with a local governmental entity and the index requirements under Section 176.005(1). We have a setting the statement to be included the statement to be included the statement to be included to the local governmental entity.     Esolvit, Inc.     Check this box if you are filing an update to a previously filed questionnaire. (The law requires that you file an updated constrained to a previously filed questionnaire. (The law requires that you file an updated constrained to complete questionnaire with the originally filed questionnaire was incomplete the originally filed questionnaire was incompleted questionnaire with the originally filed questionnaire was incomplete the original filed questionnaire was incompleted questionnaire. (The law requires that you file an updated completed questionnaire was incompleted maximum and the originally filed questionnaire.     Name of local government officer about whom the information is being disclosed.     None And Not Applicable     Name of local government officer about whom the information is being disclosed.     None And Not Applicable     Name of local government officer of the update or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer or a family member of the officer section for the ubainess relationship described. Attach additional pages to this Form CIQ as necessary.     A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer serves as an officer or director, or holds an ownership interest of one percent or more.     Yes No     No B. Is the vendor tax given the local government officer or a family member of the officer serve	This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.	OFFICE USE ONLY
y tax the questionate must be filed with the records administrator of the local governmental entity not later may the phonones gave of tacks that require the statement to be led. See Section 176:006(a-1), Local Government Code. An entity of the order naverngly violates Section 176:006, Local Government Code. An entity of the order naverngly violates section 176:006(a-1), Local Government Code.         Name of vendor who has a business relationship with local governmental entity.       Esolution is a middine with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.]         Name of local government officer about whom the information is being disclosed.       None And Not Applicable         Name of local government officer about whom the information is being disclosed.       None And Not Applicable         Name of local government officer or a family member of the officer, as described by Section 176:003(a)(2)(A). Also describe any family relationship with the local government officer complex subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.         A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from or a family member of the officer serves as an officer or affect from the local government officer or a family member of the officer serves as an officer or director, or holds an ownership interest of one percent or more.         Image: Section 176:003(a)(2)(B), excluding gitts described in Section 176:003(a)(2)(B), excluding gitts described in Section 176:003(a)(2)(B), excluding gitts described in Section 17	This questionnaire is being flied in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).	Date Received
wends commits an offense if he vendsr haveragy violates Section 176.006, Local Government Code, An         Mame of vendor who has a business relationship with local governmental entity.         Esolvit, Inc.         Check this box if you are filing an update to a previously filed questionnaire. (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)         Name of local government officer about whom the information is being disclosed.         None And Not Applicable         Name of local government officer about whom the information is being disclosed.         Complete subparts A and B for each employment or other business relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.         A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local government officer or a family member of the officer serves as an officer or director, or holds an overratile entity?         Ves       No         B. Is the vendor neceiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer and the advection of the docal government officer or a family member of the officer or a family membe	By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. See Section 176.006(a-1), Local Government Code.	
Name of vendor who has a business relationship with local governmental entity.         Esolvit, Inc.         Check this box if you are filing an update to a previously filed questionnaire. (The law requires that you file an updated completed questionnaire was incomplete or inaccurate.)         Name of local government officer about whom the information is being disclosed.         None And Not Applicable         Name of local government officer about whom the information is being disclosed.         None And Not Applicable         Name of Officer         Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIO as necessary.         A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?         Yes       No         B. Is the vendor receiving or likely to receive taxable income, other than investment income is not received from the local government officer or a family member of the officer serves as an officer or director, or holds an ownership interest of one percent or more.         Yes       No         Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with the specet to which the local government officer serves as an officer or director, o	vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An iffense under this section is a misdemeanor.	
Esolvit, Inc.       Check this box if you are filing an update to a previously filed questionnaire. (The law requires that you file an updated completed questionnaire with the appropriate Sing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)         Name of local government officer about whom the information is being disclosed.         Name of local government officer about whom the information is being disclosed.         None And Not Applicable         Name of officer         Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.         A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from or at family member of the officer AND the taxable income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local government officer or a family member of the officer serves as an officer or director, or holds an or the business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.         Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other busin	Name of vendor who has a business relationship with local governmental entity.	1
Check this box if you are filing an update to a previously filed questionnaire. (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.) Name of local government officer about whom the information is being disclosed. <u>None And Not Applicable</u> Name of Officer  Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.  A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?  yes No B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?  Yes No Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with nespect to which the local government officer or a family member of the officer ror a family member of as a officer or director, or holds an ownership interest of one percent or more.  Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with nespect to which the local government officer or a family member of the officer or a family member of the officer or director, or holds an ownership interest of one percent or more.  Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or	Esolvit, Inc.	
None And Not Applicable         Name of Officer         Describe each employment or other business relationship with the local government officer, or a family member of the officer as described by Section 176.03(a)(2)(A). Also describe any family relationship with the local government officer Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.         A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?         Yes       No         B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local government al ently?         Yes       No         Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer or a family member of the officer serves as an officer or director, or holds an ownership interest of one percent or more.         Check this box if the vendor has given the local government officer or a family member of the officer or a family member of the officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).         Dignature of vendor doring business with the givenmental ently       1/9/25	Check this box if you are filing an update to a previously filed questionnaire. (The law re completed questionnaire with the appropriate filing authority not later than the 7th busines you became aware that the originally filed questionnaire was incomplete or inaccurate.)	equires that you file an updated as day after the date on which
Name of Officer         Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CiQ as necessary.         A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?         Pres       No         B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local governmental entity?         Pres       No         Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer or a family member of the officer serves as an officer or director, or holds an ownership interest of one percent or more.         Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a)(2)(B	None And Not Applicable	
Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.         A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?         Pes       No         B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local government officer or a family member of the officer serves as an officer or director, or holds an ownership interest of one percent or more.         Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer or a family member of the officer serves as an officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).         Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).         Digrature of vendor Going business with the governmental ently       1/9/25	Name of Officer	
Yes       No         B. Is the vendor receiving or likely to receive tax able income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?         Yes       No         Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.         Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).         Jump J.       Jump J.         Signature of vendor doing business with the governmental entity       Date	A. Is the local government officer or a family member of the officer receiving or l other than investment income, from the vendor?	ikely to receive taxable income,
B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction     of the local government officer or a family member of the officer AND the taxable income is not received from the     local governmental entity?      Yes     No  Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or     other business entity with respect to which the local government officer serves as an officer or director, or holds an     ownership interest of one percent or more.  Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts     as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).  B.M.M.M.M. Signature of Vendor doing business with the governmental entity	Yes No	
Yes       No         Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.         Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).         Describe each employment of vendor doing business with the governmental entity       1/9/25	B. Is the vendor receiving or likely to receive taxable income, other than investmen of the local government officer or a family member of the officer AND the taxable local governmental entity?	t income, from or at the direction income is not received from the
Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.         Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).         B. Abadanii         Signature of vendor doing business with the governmental entity	Yes No	
Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).	Describe each employment or business relationship that the vendor named in Section 1 n other business entity with respect to which the local government officer serves as an o ownership interest of one percent or more.	naintains with a corporation or officer or director, or holds an
B. voho an I Signature of vendor doing business with the governmental entity Date	Check this box if the vendor has given the local government officer or a family member as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.	of the officer one or more gifts 003(a-1).
Signature of fendor doing business with the governmental entity Date	B.vohaxan 1/9/25	
	Signature of Fendor doing business with the governmental entity	Date

#### CONFLICT OF INTEREST QUESTIONNAIRE For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at http://www.statutes.legis.state.tx.us/ Docs/LG/htm/LG.176.htm. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

(A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;

(B) a transaction conducted at a price and subject to terms available to the public; or

(C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

#### Local Government Code § 176.003(a)(2)(A) and (B):

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds \$2,500 during the 12-month period preceding the date that the officer becomes aware that

 a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than \$100 in the 12-month period preceding the date the officer becomes aware that:

- (i) a contract between the local governmental entity and vendor has been executed; or
- (ii) the local governmental entity is considering entering into a contract with the vendor.

#### Local Government Code § 176.006(a) and (a-1)

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

 has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);

(2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or

(3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

(1) the date that the vendor:

 (A) begins discussions or negotiations to enter into a contract with the local governmental entity; or

(B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

 (A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);

(B) that the vendor has given one or more gifts described by Subsection (a); or

(C) of a family relationship with a local government officer.

Form provided by Texas Ethics Commission





## **Franchise Tax Account Status**

As of : 01/09/2025 12:46:06

# This summary page is designed to satisfy standard business needs. If you need to reinstate or terminate a business with the Texas Secretary of State, you must obtain a certificate specific to that purpose.

ESOLVIT INC.		
Texas Taxpayer Number	32020670553	
Mailing Address	11675 JOLLYVILLE RD STE 152 AUSTIN, TX 78759-3939	
Right to Transact Business in Texas	ACTIVE	
State of Formation	ТХ	
SOS Registration Status (SOS status updated each business day)	ACTIVE	
Effective SOS Registration Date	09/22/2006	
Texas SOS File Number	0800711004	
Registered Agent Name	SRINIVASA BODDAPU	
Registered Office Street Address	7002 CURRIER COVE AUSTIN, TX 78717	

# Texas Historically Underutilized Business (HUB) Certificate



Certificate/VID Number:12058354Approval Date:NovembeScheduled Expiration Date:Novembe

1205835431200 November 30, 2023 November 30, 2027

The Texas Comptroller of Public Accounts (CPA), hereby certifies that

# Esolvit Inc. DBA ESOLVIT GOVERNMENT SOLUTIONS

has successfully met the established requirements of the State of Texas Historically Underutilized Business (HUB) Program to be recognized as a HUB. This certificate printed **November 30, 2023**, supersedes any registration and certificate previously issued by the HUB Program. If there are any changes regarding the information (i.e., business structure, ownership, day to day management, operational control, business location) provided in the submission of the business; application for registration/certification as a HUB, you must immediately (within 30 days of such changes) notify the HUB Program in writing. The CPA reserves the right to conduct a compliance review at any time to confirm HUB eligibility. HUB certification may be suspended or revoked upon findings of ineligibility.

*Statewide HUB Program Statewide Procurement Division* 

Note: In order for State agencies and institutions of higher education (universities) to be credited for utilizing this business as a HUB, they must award payment under the Certificate/VID Number identified above. Agencies, universities and prime contractors are encouraged to verify the company's HUB certification prior to issuing a notice of award by accessing the Internet (https://mycpa.cpa.state.tx.us/tpasscmblsearch/index.jsp) or by contacting the HUB Program at 512-463-5872 or toll-free in Texas at 1-888-863-5881.

# Certificate of Registration

# **IT SERVICE MANAGEMENT SYSTEM**

Certificate No - 16521

This is to certify that the Management System of

# Esolvit, Inc. 11675 Jollyville Road, Suite# 152, Austin, Texas 78759, USA

has been found to conform to:

# **ISO/IEC 20000-1:2018**

INTERNATIONAL STANDARD FOR IT SERVICE MANAGEMENT THAT DEFINES REQUIREMENTS FOR THE DEVELOPMENT, IMPLEMENTATION, MONITORING, MAINTENANCE, AND IMPROVEMENT OF AN IT SERVICE MANAGEMENT SYSTEM.

This Certificate is valid for the below scope of services Delivering Comprehensive Information Technology Services and Solutions utilizing Cutting-Edge Technologies including Artificial Intelligence, Software Development, Product Engineering, Cyber Security, Cloud Services and Digital Talent Management.

Date of Registration

09/03/2024

**Re-certification Date** 

**08/03/2027** (All dates are in dd/mm/yyyy format )





Date of Expiry

08/03/2025

Signed on behalf of AQSR

Teelland

The certificate is valid for three years subject to satisfactory annual assessment. To check certificate authencity, please visit www.aqsrworld.com American Quality Standards Registrars, 1201 Orange Street, Suite 600, Wilmington, DE 19801, USA

Accreditation by United States Accreditation Council (USAC) LLC, Miami, Florida, USA, Web - www.usacamerica.us





# Esolvit, Inc. is a global leader in providing information technology services and solutions for enterprises and government industries around the globe for 18+ years.















ITSAC: DIR-CPO-5530 DBITS: DIR-CPO-4940

# **CONTRACT VEHICLES**

**TIPS**: 230703, 240101, 240601 **Region One ESC : 23-0127** 

# We offer the following technology categories through the ITSAC contract



Applications/

Software

Development



Data/Database

Administration



Web Development **Quality Assurance** & Testing



Networking/ **Telecommunications** 







Project Management



Services, Help Desk & Operations

**IT Service** Management Operations



IT Contract Management and

Procurement

## We offer the following technology categories through the DBITS contract



**Application Development** Maintenance, and Support **Technology Upgrade Migration & Transformation Enterprise Resource** Planning (ERP)



**Business Intelligence (BI)** Data Management **Analytics and Automation Data Warehousing** 



**IT Assessments & Planning** Independent Verification and Validation (IV&V), and **Market Research** Procurement Advisory, and **Contract Implementation** 

Services



**Project and Program** Management

## **Esolvit Government Solutions**

www.esolvit.com | 11675 Jollyville Road, Suite#152, Austin, TX 78759 Email: dir@esolvit.com, Usha@esolvit.com | Office: 512-551-4000 | Direct: 512-350-9564



Esolvit has been honored with many prestigious awards including the U.S. Department of Commerce National MBDA Minority Professional Services Firm of the year 2020, National Award Winner for Fast 50 and Fast 100 from USPAACC.



Discover the power of our award-winning, woman-owned, and minority-owned information technology services provider with active state, local and federal government certifications.

Serving as a Mentor for the Mentor-Protege Program to the State of Texas agencies TDLR, DMV, and GLO since 2018.

**Received Grade A Vendor Performance VPTS reports from various agencies.** 

# **Trusted Partnerships**

We have had the privilege of providing solutions to many government entities and take pride in successfully completing and renewing our government contracts.



# **Additional IT Solutions**

We also work with the world's top private brands, fortune 1,000 companies, multinational companies, and innovative start-ups.

😯 Cyber Security	📚 Application Development
🛆 Cloud / Infrastructure	<b>III</b> PMO / Analytics
🗱 Digital / Al	ERP

#### **Esolvit Government Solutions**

www.esolvit.com | 11675 Jollyville Road, Suite#152, Austin, TX 78759 Email: dir@esolvit.com, Usha@esolvit.com | Office: 512-551-4000 | Direct: 512-350-9564





dba Esolvit Government Solutions



## \* Nationally certified by the: SOUTHWEST MINORITY SUPPLIER DEVELOPMENT COUNCIL

\*NAICS Code(s): <u>541511; 541512; 541513; 541519; 541611; 541618; 561320; 511210</u>

\* Description of their product/services as defined by the North American Industry Classification System (NAICS)

03/07/2024

Issued Date

03/07/2025

**Expiration Date** 

AU05463

**Certificate Number** 

Ying McGuire NMSDC CEO and President

Haren 130

Karen Box President/CEO

By using your password (NMSDC issued only), authorized users may log into NMSDC Central to view the entire profile: http://nmsdc.org

Certify, Develop, Connect, Advocate.

\* MBEs certified by an Affiliate of the National Minority Supplier Development Council, Inc.®



# CERTIFICATE

This is to certify that the Quality Management System of

# Esolvit, Inc.

11675 Jollyville Road, Suite# 152, Austin, Texas 78759, USA

has been assessed and found to conform to the requirements of

# **ISO 9001:2015**

This Certificate is valid for the following scope

Delivering Comprehensive Information Technology Services and Solutions utilizing Cutting-Edge Technologies including Artificial Intelligence, Software Development, Product Engineering, Cyber Security, Cloud Services and Digital Talent Management.

> Certificate No. Registration Date Issue Date Expiry Date Recertification Date

:AMER17032 :09/03/2024 :14/03/2024 :08/03/2025 :08/03/2027



#### **AMERICO QUALITY STANDARDS REGISTECH PVT. LTD**

Key Location: 1910 Thomes Ave, Cheyenne, Wyoming, WY 82001, USA Operations Office: D 303, 104.Nisarg plaza, Bhumkar chowk - Hinjewadi road, Wakad, Pune 411057





For verification and updated information concerning the present certificate, please visit www.americocert.com The Certificate is valid for period of 3 years subject to satisfactory annual surveillance audit. This Certificate is the property of AMERICO Quality Standards Registech Pvt. Ltd. & shall be returned immediately when demanded.

# **AI Architect**

With over 30 years of technical data experience across many different technologies, I have developed the deep skills required to solve difficult data related problems. My personal ambition, curiosity, and enjoyment for learning these technologies has allowed me to spend countless hours of my own personal, in addition to my professional time in these endeavors. By assembling and modeling the data, then using powerful modern visualization tools, I have empowered targeted users at all levels of the organization to maximize their analytical and decision-making skills.

The cloud offers so many useful economical and advanced tools, but only to those who spend the time learning what they are and how to use them. Throughout my career, I have always continued learning and proving my knowledge by obtaining primarily Microsoft SQL Server and Azure certifications, but also others like Databricks and Teradata.

I have worked my way up through technical support/trainer, Foxpro, SQL Server, ETL, Reporting, OLAP, Data Warehouse, Machine Learning, Big Data and MPP Databases (Synapse, PostgreSQL (Greenplum) and Teradata). I have primarily worked around the Microsoft BI stack, especially ETL, SQL Server and PowerBI, but over my career there have been many contracts where I have had to learn other critical technologies as well. In the last 10 years, I have continued to devote my attention and time toward learning and implementing cloud technologies with AWS, but primarily with Azure. In the last five years I have devoted a significant amount of my time to learning Data Lake architecture and Databricks; as well as Artificial Intelligence and Machine/Deep Learning architecture.

#### PREMIERE CERTIFICATIONS

#### Azure

- ٠ Solution Architect
- Data Engineer
- Security Engineer
- Data Scientist

#### **AI-Machine Learning**

AI/ML Post Grad Certification -Purdue

#### Databricks Lakehouse

#### Platform Architect •

- Platform Administrator
- Data Engineer Pro •
- Machine Learning Pro
- Data Engineer Assoc Machine Learning Assoc
- Data Analyst Assoc ٠
- Lakehouse Fundamentals v2
- Lakehouse Fundamentals
- Associate Developer for Apache Spark 3.0 - Python

#### SKILLS

- Data Warehouse Modeling (Kimball, Star-schema) •
- SQL Server (TSQL)
- SQL Server Integration Services •
- SQL Server Analysis Services (MD and MDX) •
- SQL Server Analysis Services (Tabular and DAX) ٠
- SQL Server Reporting Services
- Power BI

- Azure Databricks
- Azure Data Factory
- Azure Logic Apps
- Azure Machine Learning (Python)
- Office 365-Power Apps
- Office 365-Power Automate-Flow

**SQL** Server and Analytics

**Certifications** 

Power BI

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MCSE(s) and MCSA(s)

Transcript of all Azure and Microsoft

- Talend ETL
- AWS-S3
- AWS-E2
- Python/PySpark
- Git
- Dynamics 365

#### **EXPERIENCE**

AI Architect – Azure Databricks, Overwatch, Azure, Storage, Cost Management, Python notebooks, PowerBI 11/2022 - Current

- Work on Platform team
- Develop best practices for using Databricks efficiently
- Created, designed, and implement idea to build a Power BI app (with KPIs) and Pyspark Notebooks/Workflows ETL that tracks all Databricks tables stats, and whether certain techniques are being applied (OPTIMIZE, VACCUM, ZORDER, PATITIONING, BLOOM FILTERS, Small File Problems, etc.)
- Using Azure Cost Management and Databricks tagging to develop cost analysis tool
- Using Azure Blob Export to extract all datalake storage use to analyze for cost reduction
- Involved in creating migrating data and views of all data environments to UC Catalog

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- AWS-Redshift

Azure SOL

# Senior Principal and Senior Architect – Azure, SQLServer, Analysis Services, KeyVault, Devops, DataBricks, EventHub, DataFactory, SecurityCenter, Automation, Alerts, ActiveDirectory, Crystal Reports, PowerBI and Report Builder, Gitlab

Prokarma merged to Concentrix Catalyst, USA

10/2021 - 7/2022

- Provide technical and strategic direction to Onshore/Offshore team composing of over 15 professional architects and developers.
- Meet project goal to complete a full migration from Crystal/SQL Server on-site to Azure (I came in after former leads had left and development was heading toward final phase)
- Aggressive deadlines were given, and I provided technical recommendations to team and client on how we would meet these deadlines
- Involved with senior management on provide client with roadmap for future technical opportunities
- Identify and address current weaknesses and opportunities in current development
- · Work with project manager to incorporate work tasks into Azure Devop boards and present to client leadership/project status
- Advisement on Devops code deployment for data factory pipelines and sql code, as well as QA refresh strategy and schedule
- Develop security in SQL views and Analysis Services for hiding PII data, as well as Row Level Security (RLS) and View SQL logic/Active Directory to ensure row level security on views used by power users.

# Senior BI Architect/Developer (Contractor) – Power BI Embedded, Azure Data Factory, Azure Synapse, Snowflake, Azure Blob Storage, Azure SQL,

McKesson/Macro Helix Corporation – Atlanta, GA 2/2021 – 3/2021

Assisted lead Power BI architect/developer in late part of the project's dashboard development life cycle. Worked on enterprise dashboard (trend line charts, bookmark layering logic for line charts, conditional color consistency/placement for charts/cards/custom images across all pages, capacity planning/performance monitoring, DAX) and ETL (full loads, changing dimension type 2, change tracking and late changing dimensions logic in stored procedures, ADF links to Synapse, Azure SQL, Azure Blob, Snowflake) development and testing. T

#### Senior Architect (Contractor) – Azure, AWS, Power Apps, Power Automate, Power BI, Data Factory, Azure Data Lake, Dynamic 365 CRM Cornerstone Defense – Herndon, VA

5/2020 - 1/2021

Worked on DOD JPO-F35 contract providing client presentations and Data Lake/ETL Architecture analysis/recommendations/prototypes. Also, in charge of collection of meta data of all files moving through the ETL system. Project had very specialized requirements that just a normal data dictionary would not be able to capture, so created a full PaaS application using a combination of Office 365 Power Platform and Azure SQL/Blob Storage:

Azure Power Platform

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• Power Apps

Power BI

- Power Automation
- Databricks

Azure

- SQL and Synapse
- o Azure Blob, Security (ABAC, RBAC, PBAC)

Dynamics 365 CRM

#### Azure BI Architect/Developer (Contractor) – Azure SQL Server, Azure Data Factory, Azure DevOps, Power BI, DAX, SSIS Urban Air – Bedford, TX

2/2020 - 3/2020 (note: all contractors were laid off due to location shutdowns from Coronavirus)

- Azure Data Factory and Azure Logic Apps
  - Built first ETL framework for repeatable use (rinse and repeat.) It was a combination of Azure Data Factory pipelines, SQL Server stored procedures, and Logic Apps emailing functionality. Replaced the SSIS packages that were currently in use. The framework was based on a basic stage and load ETL design focusing on a separation of the extract objects from the load objects.

The initial framework implemented Membership Cancellation data, then moved on to other subject areas such as Sales Transactions, etc. Data warehouse build out though, was in its infancy.

- Store Procedures used with Lookup Activity and core Activity for parameter passing and performing Extract and Load to warehouse code.
- Stored procedures incorporated error handling (try-catch) and transactions (for load procedures, not extract)
- Stored procedures were called from ADF pipelines.
- Meta data collection procedures, tables and processes were also incorporated in the framework. These included Process Log and Lineage was established via a Process Log ID placed in every table row affected. Processes were also established for collecting error information, as well as table load counts for DML activities for each run.
- Setup Email notifications from Pipelines via Logic Apps
- Azure VM Host SQL Server databases (Stage and EDW) as Data Warehouse
- Azure SQL Source Data for extraction to Data Warehouse
- Power BI Sourced from SQL Server Data Warehouse
- Azure Dev Ops
  - o Setup and updated database objects via branches and command line GIT
  - o Setup and updated Azure Data Factory objects via branches
  - Worked directly with Repositories, Story boards, Bug fixes, etc. were setup Azure Dev Ops
- Power BI
  - o Provide research and solution options for setting date slicer to last 10 days back dynamically for a calendar From-To slicer.
  - Created and implemented custom measures in DAX for 4-4-5 Week Prior Year Look Back for sales totals and other metrics for the main corporate dashboard.
- Off-shore Team Code Review
  - Managed ADF and Stored Procedure framework training and implementation
  - o Performed code reviews or process and stored procedures, including ADF Pipelines

#### Cloud BI -ETL Architect/Developer (Contractor) – Azure SQL Server, SSAS, SSIS, AWS Redshift, AWS MySQL, Talend, Aloha, Power BI TopGolf - Dallas, Texas

6/2018 - 6/2019

On team to create and implement migration strategy of SQL Data warehouse to AWS Redshift data warehouse.

- Created and implemented Talend ETL package framework (templates) for migration of SQL data warehouse tables to Redshift data warehouse.
- Created and implemented Talend ETL package framework (templates) for daily extraction of each venue's MySQL data, via an EC2 intermediary replication MySQL replication server into Redshift data warehouse.
- Created Talend ETL/Web system for Aloha Payroll Extraction process for ADP.
- Created Talend ETL system for Game history statistics.
- Created SSIS ETL packages for their Australian franchise.

#### BI / ETL Architect/Developer (Contractor) - SSIS2016, SSAS2016, SSRS2016

Uncle Julio's Mexican Restaurants - Dallas, Texas

4/2018 - 6/2018

- Created ETL for four new sources from external parties to incorporate in data warehouse and cube
- Online Ordering / Seating Reservations
- Survey Data from RAIL Devices (Self payment devices)
- Weather history from website API Migrated old SSIS 2005 packages for employee Comp cards to new server 2016 package

#### Data Warehouse Architect/Developer (Contractor) - SQL 2016, Azure SQL 2016, SSAS, SSIS, Power BI

Le Duff America, - Dallas, TX

9/2017 - 2/2018

Contracted and laid down the groundwork for the architecture, design, and implementation of an enterprise data warehouse / BI solution from scratch using the following technologies:

- SQL Server 2016
  - o Database for Kimball Relational Data Warehouse
  - Integration Services for ETL
  - SQL Server Jobs
  - Reporting Services
  - o Analysis Services Multi-Dimensional Cubes
  - Power BI
- Azure
  - o Access and integrated with On-Premises Network
  - o Data warehouse database on Azure SQL Database
  - ETL and Analysis Services running on Azure VM Server
  - Power BI
- Turnover Architecture and Setup to Development Team
  - o Includes New Full-time BI Developer when Management found the "Right" person
  - Current team of developers for Operational and development support

#### Pricing Systems Data ETL Integrator (Contractor) -SQL 2016, Vistaar, Access 2015, JD Edwards, Amazon Web Services

Treasury Wine Estates – Napa Valley, California

5/2017 - 9/2017

- Initial nine weeks on-site required for training and securing operations confidence.
- Support and operations for custom built Access and SQL databases used for pricing integration between Vistaar Pricing System and JD Edwards while system creator was on leave.
- Fast Learn of a very complex of assorted servers and systems that were wired together.
  - Understand and execute the manual reporting systems
  - Understand and execute all the manual data flows between systems via many Ftp sites, programs and sets of templates, scripts, and programs.
- Role main purpose was to keep a complex pricing group of programs running so that pricing discrepancies, modifications, deletions and additions could quickly be implemented across all the systems on a daily basis.
- Support operations of a parallel development project that will replace significant functionality of the system.

#### BI / ETL Architect/Developer (Contractor) - SSIS2014, SSAS2014, SSRS2014, SS2014, Azure VM SQL 2016

Uncle Julio's Mexican Restaurants - Dallas, Texas

3/2016 - 1/2017

- Re-wrote all ETL SSIS packages that extract data primarily from restaurants' source data (Aloha restaurant software), as well as other source systems, including Paytronix.
- Full Migration of data from SQL 2005 to SQL 2014 to Azure VM as a Pilot Test.
- Worked on re-architecture of data warehouse from an ODS to a Kimball-based data warehouse, adding changing dimensions and consolidating subject groups.
- Working closely with subject matter expert and architect to identify, create and implement business and technical requirements.
- Highly involved in Azure evaluation, pricing, pilot testing, and implementation of system as a Cloud based solution.
- Creation of system documentation focused on setup and recoverability steps.
- On-going training of internal BI personnel for eventual full turn-over of new system.

#### BI Architect/Developer (Contractor) – SSIS2008, SSAS2008, SSRS2008, SS2008, PostgreSQL 8.3 (Green Plum), Power Pivot

Army, Air Force Exchange – AAFES - Dallas, Texas

10/2013 - 1/2016

- Created SSRS Reporting System for analyzing 14 Cashier Register key presses which included some of the following Item Voids, Transaction Discounts, Aborts, Suspends, Drive-Offs, Coupons, Refunds, etc.
- Incorporated SSAS KPIs and custom MDX coding to support the 10 plus different SSRS views of the system
- Developed the ETL packages that run nightly to populate the Data Mart that is used by the Cube and is based on the Kimball Star Schema.

The Goals established for the KPIs were set up at four different Hierarchical Location levels (Region, Area, Exchange, and Store.) Each goal for each level was set up and not based on a roll up for the ultimate management flexibility in the assignments. This was accomplished by a small, but extremely powerful MDX applied in Goal Calculated Members. The Actuals used for the KPIs were made of percentages based on different measures uniquely applied to each metric type. KPIs are established in the Cube, therefore the same KPIs indicators can be shown in Excel Pivot Tables as Reporting Services.

- Migration of SQL Server objects to PostgreSQL 8.3 (Green Plum Version) for the Sales Data Mart.
- Re-wired cube to work against PostgreSQL star schema tables/views.
- Introduced Cube partitioning to drastically reduce the time to create daily and weekly cube builds on large cubes.
- Created a subsystem for automatically building these partitions via an SSIS package and metadata stored in tables specific to the needs of the respective cube. Also, made the package to load balance and speed up the overall time of building the partitions by implementing the SSIS package to use parallel process up to four partitions at a time (that's all the processors we were allowed to use on the box for parallel processing.)
- Recommended and implemented Cube Partition Strategy where only incremental data loading and processing would be required on specific measure groups with reduced cube build times for one cube from (too big to process-estimated a week to process, crashed box) to only 4-5 hours once per week. By partitioning another cube, processing went from 12 to 3 hours, again using an incremental partition processing approach.
- Addressed measure group granularity level (was at seconds) for a cube and reduced its daily build time from 8 hours to 8 minutes, with the added benefit of improved querying performance.

Current contract was extended after the first four months. I was hired back for this contract by the same group (BI Department) that I worked for in 2010 for eight months (see resume below.)

#### SQL Server ETL Architect (Contractor) - SQL Server 20008 (SSIS)

Marriott Vacation Club Project – Orlando, Florida 7/2013 – 8/2013

- Logical Design Phase
  - Identifying Report Data Requirements
  - Identifying Data Sources
  - Consulting with Data Architect on both OLTP and Star Schema Logical designs

#### SQL Server Subject Matter Expert (Contractor) - SQL Server 2000, 2005, 20008, (SQL Engine, SSRS, SSIS, SSAS)

Bank of America – Dallas, TX 1/2013 – 5/2013 SOL Server Duties Include

- Member of Stability and Performance Group
- Create and implement Design and Coding Best Practices documents
- Administer Business Requirements Document (BRD) Reviews
- Administer High Level Design (HLD) Reviews
- Administer Low Level Design (LLD) Reviews
- Administer Code Level Reviews

#### MCM Training (Microsoft Certified Master in SQL Server 2008) - Microsoft Certification Program

Self-Study (Certified Master of SQL Server 2008 - MCM) - Arlington, Texas

7/2012 - 12/2012

Training for MCM Exams

• 88-870 MCM: SQL Server 2008, Knowledge Exam ... Passed

Study Topics include:

- High Availability (Database Mirroring, Peer-to-Peer Replication, Transaction Replication, Log Shipping)
- Backup (Full, Bulk Load, Simple) / Restore (Partial, On-line, Page, Time)
- Performance Tuning (DMVs, Data Collector, Data Management Warehouse, Profiler, Performance Monitor, Extended Events, Index Analysis, Query Plan Analysis Cache Plans, Waits and Queues, Instant Initialization)
- Security (Transparent Data Encryption, Cell-Level Encryption, Auditing)
- Other (Central Management Server, Policy-Based Management, Resource Governor, Service Broker, Change Data Capture, Table Partitioning)

#### SQL Architect / Developer (Contractor) - SS2008, SSIS, SSRS, SharePoint 2010

Texas Health Resources – Arlington, Texas

1/2012 - 7/2012

- Full database design and implementation for reporting Key Performance Indicators (KPI) and their respect three levels of targets over different periods (Month, Quarter, Half Year, Full Year and YTD.) Performance levels (background coloration) are assigned to each KPI value based on the KPI value's position relative to its targets. Dashboard consists of four different levels of detail for drilldown.
- Created a SSRS Dashboard as well as a suite of administrative and system monitoring reports. One report allows the user to change data on the report and save it directly back to the database through the report itself. All reports are setup on the SSRS server and then accessed via SharePoint 2010.
- Designed and implemented an ETL solution using SSIS that populates the database via specifically designed Excel Templates for each KPI that can be submitted at any time by the user. The spreadsheet files are then processed via a SQL job that runs every half hour.
- Implemented email notifications embedded in the ETL alert users, system administrators, and operators when a problem occurred, when data was updated, or when data was late.

#### BI Application Developer (Contractor) - SSIS2008, SSAS2008, SSRS2008, SS2008, Teradata, SharePoint 2007

#### Army, Air Force Exchange – AAFES - Dallas, Texas

5/2011 -12/2011

- Created SSRS Reporting System for analyzing Softline-Size distribution based on Sales and Reorder points to determine purchasing mixes. Create Cube, using a SCD Type 2 Customer dimension, to evaluate Customer Lifetime Value over 2-year period and 14 demographics (Age, Gender, Marital Status, Rank, etc.)
- Enhanced Food POS Cube to incorporate discounts and create reports in SSRS to track discounts to identify fraud, determined discount percentages outside norm for restaurant chains, and correlation of discounts to revenue generated. Create SSRS Report that for Millionth Snicker bar sold contest.
- Created all ETL in SSIS that ran against both SQL and Teradata data sources to supply data to the above applications.

#### Senior SQL Developer (Contractor) – SSIS2008, SS2008

Think Finance - Fort Worth, Texas

1/2011 - 4/2011

- Built an ETL type posting system using SSIS 2008.
- All packages were created to automate the different functions required for selling past due debt loans to a third-party collection company. Packages are written so that each event involved in the sale of a past due loan is recorded. A monthly cycle may incur up to 20 different activities using different business rules ranging from email alerts to closing out the account.
- Implemented Package recovery and restart ability to ensure data integrity.
- Implemented the ability for some packages to roll back all changes (including deletion of csv files) via package event.
- Designed a highly normalized metadata database specifically to support these packages' automated functionality. This database also held the actual log and debt tables.

#### ETL Architect/Developer (Contractor) - SSIS, SS2005

Alcon Laboratories, Fort Worth, TX 3/2010 - 7/2010

- Creation and modification of ETL processes and stored procedures to populate International Data Warehouse.
- Used Control-M scheduler for scheduling DTS packages.
- Added processes for product sales explosion and indirect customer sales based on specifications handed down by the Business Analyst and ETL Architect.

#### Business Intelligence Architect/Developer (Contractor) - SSIS2005, SSAS2008, SS2008, Performance Point, ProClarity

Mary Kay – Dallas, Texas

9/2008 - 12/2009

- Full development and implementation to collect NETIQ data into a data warehouse via SSIS.
- Created new systems that allow Proactive Caching emulation via SSIS packages for better control over the Cube updates and automatic creation of new partitions without user intervention.
- Created dashboards via Performance Point 2007; as well as scorecard reports via ProClarity and published them into SharePoint Server 2007.
- On-going changes to existing SSIS packages for use with other systems.

#### ETL Architect/Developer (Contractor) - SSIS, SS2005

Alcon Laboratories, Fort Worth, TX

10/2007 - 6/2008

- Used SSIS and SQL 2005 to build an ETL interface which imports enterprise human resource files from an outside vendor and disperses its contents to 15 different systems.
- Established standards and best practices that will be used in future SSIS projects.
- Configurations files were used extensively for all the packages, which not only made many packages re-usable, but also allows for easy deployment between environments.
- Data quality auditing steps were created in the packages to ensure that data counts and changes fell within acceptable thresholds and if they did not, errors would be raised back to the job operators as to the problems. That would then trigger any notification and troubleshooting procedures needed to resolve the problem.
- Embedded Restart ability functionality into the control flow of the system.

#### Data Warehouse/OLAP Architect/Developer (Contractor) - SSAS, SSIS, SSRS, SS2005

Corner Bakery Café Restaurant Chain (formerly with Brinker), Dallas, TX

6/2007 - 10/2007

- Helped kick-off company's data warehouse initiative using cube technology and reporting services as the front end.
- Worked with VP of IT to set the plan, design, and architecture; as well as actual development of a cost-effective OLAP solution made up of Microsoft BI technologies (SSIS, SSRS, SSAS) that fits the way the company does business.
- The work accomplished provides a foundation from which the company can continue to build its enterprise OLAP solution in-house.
- Creation and use of MDX based calculated members for YTD totals across Year, Quarter, Period, Week, Day with comparisons against the same date range for prior year; as well as the variances and variance percentages that result from these comparisons.
- Additional calculated members include Rolling year on all Date Period segments, which allows for almost instant analysis of one year rolling windows across multiple selected date period segments on reports. All these calculated fields appear as additional fields in the SSRS report builder repository from which any power user can easily select from and add to information rich reports that can be dispersed to the enterprise through an internet browser in minutes.
- Created a restaurant-based Comp dimension that emulates the company's logic in determining comparable data based on the individual restaurant's Open date and applying it to the fact tables.
- Performed ETL process and reconciliation of all sales data and transaction counts across three disparate POS systems to establish a baseline from which daily imports (ETL) of data could begin.

#### Data Warehouse Architect/Developer – SSAS, SSIS, SS2005, Executive Viewer

Accuro - Innovative Managed Care Systems (IMaCS) - Dallas, Texas

11/2006 - 5/2007

- Responsible for Data Warehouse design and implementation using SSAS 2005 and SSIS 2005.
- Focus on moving Hospital Profitability system relational reporting system to Internet accessible SSAS system (cube) incorporating third party front end OLAP software (Executive Viewer.)
- Creation and implementation of technical requirements documents, time estimates, schedules, and deliverables.
- Created standards document that included naming conventions, storage layouts and star schema.
- Created SSIS packages with logging, recoverability checkpoints, and abstracted data sources.
- Created sophisticated calculated members using MDX techniques.

#### Data Warehouse Manager – AS2K, DTS, SS2K, SSRS

Isthmus, Inc / American Century Casualty – Fort Worth, Texas6/2005-8/2006

- Managed start-up data warehouse project for property and casualty insurance company with the main goal to enable actuary to identify trends to tweak rate factors for maximum profitability.
- Worked with DBA, developers, and business stakeholders in determining requirements.
- Created requirements document, scheduling milestones, naming conventions, data quality standards, fact table granularity, dimensions, subject areas (Premiums, Claims, Losses, etc.), data modeling, demonstration/prototype/evaluation/purchase of OLAP software (Executive Viewer by TemTec) and slowly changing dimension strategy.
- Used SQL Server 2000, Analysis Services, DTS, Visio, Microsoft Project, and Executive Viewer.

#### SQL DBA (Contractor)

Auto Nation, Fort Lauderdale Florida 1/2003 - 4/2005

- Performance Tuning
- Change control
- Code reviews
- Transactional replication administration
- Weekly Code/Date Promotions

#### Data Warehouse Cube Developer (Contractor) - AS2K, DTS, SS2K, Teradata

Office Depot - Delray Beach, Florida

9/2004 - 12/2004

- In charge of development of Retail Sales Cube using Microsoft Analysis Services.
- Duties included layout, design, optimization, and job scheduling of cubes and their builds.
- Duties also included the creation, modification, and performance optimization of Sql for all views that called out to a Teradata relational database and against over 1 billion rows of transactional data. These views were the source for all dimensions and fact tables in the cubes. Separate views were created for two main slowly changing location and product dimensions. The specific view chosen for these slowly changing dimensions was dependent on whether a full cube build, or incremental cube build was being performed on the given day. Sales, returns, exchange rates, transaction counts, and mail-in-rebates each had their own dedicated cube. These cubes were combined into one final virtual cube that represented the Retail Sales Cube. Other dimensions in the cubes included were fiscal time, date comparable by location, currency, country, and cumulative periods-to-date.

#### Data Warehouse Manager (Contractor) - AS2K, DTS, SS2K, VB.Net

BrightStar Corporation - Doral, Florida

4/2004 - 7/2004

BrightStar Corporation is the largest distributor of cellular telephones in South and Central America with its corporate headquarters located in Miami.

- In charge of establishing first enterprise data warehouse that encompasses AR Aging, Inventory, and Sales history data from company's 15 subsidiaries located throughout United States, Central and South America.
- Set up data extraction from these subsidiaries through FTP, Replication, and Email (Excel spreadsheets.) Each data extraction presents its own unique challenges in that each subsidiary is using one of five different ERP systems. AR Aging and Inventory data are being stored as end-of-month snapshots in the cube. Each end-of-month date extraction set is associated with an end-of-month date level. A dimension has been setup that incorporates the end-of-month date data level into a time dimension, allowing for month-to-month tracking comparisons via the OLAP front end.
- Created VB.Net application for the manual import of Extraction Excel/Text files (unfortunately this was the only way we could get the data from some of the subsidiaries.) This program manages the end-of-month date datasets; and calls and runs DTS packages from a stored procedure.
- Encompassed full transaction commit/rollback capabilities and error handling in the DTS package with strong use of DTS Global variables that are populated initially from the user interface and then passed through the stored procedure. These techniques were critical to make sure that each data set was completely free of errors before being appended to the fact table.
- Automated File archiving and registering of the import event and data files and then recorded in an import register table which enables full tracking of all data extractions by subsidiary, end-of-month date, and data category.

#### Data Warehouse Manager (Contractor 1993-2001; Employee 2001-2004) - AS2K, DTS, SS2K, VB.Net, ASP.Net, JavaScript

Southern Wine and Spirits of America (dba. Shaw-Ross International Importers) - Miramar, Florida

5/2001 - 4/2004

Data Warehouse / OLAP / Extranet:

- Created company's first Data Warehouse and Internet OLAP system. Warehouse is created using SQL Server 2000 batches, scripts, stored procedures, and DTS. Cubes are generated from SQL Server 2000 Analysis Manager. The system is updated nightly with data from company's legacy accounting system and other legacy data stores. Additional tables in SQL Server were created and used for cross-referencing, adjustments, and security (over and above the Windows Integrated Security used for authentication.)
- The cubes entail hundreds of different calculated fields (variances, rolling 12s, YTD, monthly totals, yearly totals, etc. etc. etc.) across several dimensions (location, product, salesperson, brand manager, three-year history, 12 months, etc.) The system tracks goals, shipments, open orders, warehouse inventories, purchase orders, etc. Also, created a highly functional user-friendly extranet user interface using HTML, DHTML, JavaScript, VBScript, ASP, ADO, ADOMD (to access cube data), IIS 5.0 (using Windows Integrated Security) and SQL Server 2000 and Analysis Manager. System is used by all departments in the enterprise (from clerks to executives; but especially for management, sales and operations.)

• Drill-down and drill-across functionality is provided against the data output using DHTML and JavaScript. Aggregated data (along dimension levels) is presented from totals of the entire company down to an individual order's line items with only a couple clicks of the mouse. Screen data is easily downloaded into Excel using a third-party Excel COM object. This provides users with the raw data and/or presentation ready reports of the data (with built-in graphs) that they can save on their local computer and use for further use off-line.

Net Development:

- Worked extensively with ASP.Net and VB.Net application development. These applications incorporate Crystal Reports, Excel, XML, and SQL Server technologies. Also, created processes using MDX expressions (the generation of these expressions are not dependent on a third-party tool, thus requiring me to have a solid understanding of MDX expression syntax and its implementation) to access data in the data warehouse cubes output to the above-mentioned output tools. These processes eliminate having redundant code embedded in the output from the above reporting tools for calculations and aggregations whose code is already present in the data warehouse.
- FoxPro Development: Depletions, Bonus, HR Benefits systems.

Microsoft Premier Certifications

- Azure Solutions Architect
- Azure Data Engineer
- Azure Data Scientist Associate
- Azure Security Engineer Associate
- MCSE Data Platform
- MCSE Business Intelligence
- MCSE Data Management and Analytics

#### **EDUCATION**

Georgia Tech (GATech) Pursuing MASTER OF ANALYTICS | Atlanta, GA

#### UNIVERSITY of KANSAS (KU)

MASTER OF BUSINESS ADMINISTRATION (STRATEGY, INNOVATION & ENTREPRENEURSHIP) Lawrence, Kansas

#### M. K. UNIVERSITY BACHELOR OF ENGINEERING

(COMPUTER ENGINEERING) India

#### **SPECIALIZATIONS**

#### **EXPERTISE**

Thought Leader & Mentoring Innovation Technology Architecture Product Development eCommerce eCare Web & Mobility Decision Support Systems Reporting & Visualizations **Big Data & Analytics** Data Science Requirements-Analysis-Design Strategic Planning Governance & Roadmap Development Knowledge Systems **Rule Systems Cloud Computing** Architecture Frameworks End-to-end IT Management Master Data Management **Build Organizations** 

#### SKILLS

Academically motivated, a proven result oriented thought leader who operates in the most challenging environments with ease producing breakthrough results with clarity; contributing to enhancing the scale and performance measures.

## QUICK SUMMARY

#### Wells Fargo N.A. | Vice-President - Lead Software Engineer | AI-NLP-

#### Analytics-Big Data | Aug 2019-current | Remote Employee

- Providing Technology Architecture in the AI-ML space addressing Risk/Surveillance.
- Perform Data Architecture in the AI-ML& Data Science practices.
  - Big data integration for data processing needs to ETL, Pipelines, run Models etc.
  - Backend data persisted in Elastic Search & Oracle
  - High Performance Object Store in S3 and its administration.
- Package engines for the purposes of NLP Tokenization, apply Data Science Models.
- Certified as Product Owner with Wells Fargo Technology Standards Center.
- Helped with the adoption strategies of integrating technologies to support AI/ML
  - Lexicons to adopt non-English Languages
  - Cloud and High Performance object Storage
  - Replace Data Science platform with Theta Lake
- Architected solutions to fulfill roadmap directions on integrating ingestion framework.
- Perform as subject matter expert with Digital Reasoning Synthesis & Cognition
- products that helps with running many Data Science models, Lexicon analysis etc.
  - Contributing to the Application architecture, design and development:
    - Pipeline development with filtering and transformation
    - Data preparation involving ETL and Data curation from Key Indicators (KI) node selectors on various models and classifiers under Knowledge Graphs.
    - Data engineering to effectively utilize Data Science engines like English core which addresses NLP stemming and tokenization and KI engine that apply several levels of classifiers to address Data Science models
    - Provide assistance in Data Labeling for Classifiers to run linear regression models.
  - Provide support to AI & Data Science platform support, production support etc.
  - Initiating various Change Management Tasks utilizing Service Now tool.
  - Perform necessary manual ingestion of data, setup Cognition, apply plugins etc.
  - Serve to continuously automate the AI processes. Use Autosys as a tool.
  - Work on Elastic Search indexes for various Data validations.
  - Contributed to building Strategy and Roadmap towards Cloud adoption.
  - Performed various Data Science experiments utilizing AIML models
    - Runs various predictive models utilizing NLP & Knowledge Graphs.
    - Package engines with various models and populated various filters
    - Features like Sentence Boundary extraction, spell check, MLE enablement etc.
  - Applied Optimization techniques & performance tuning
    - Dedup, iNode issues, various filtering.
    - Package engines with various models and populated various filters
    - Features like Sentence Boundary extraction, spell check, MLE enablement etc.
  - Helped the build of Business Continuity Platform (BCP) to fail over Production.
- Provided Solutions Architecture for many key issues-Platform slowness, Model output
- Upgraded Data Science Synthesys platform & dealt issues on OS upgrade to RHEL8.
- Led the manifestation and transformation of data for LOBs in common framework
  - This includes, but not limited to data from 12 channels and growing
  - Alerts concerning English core and international languages using Corpus
- Re architected Syntheys data collection process due to -
  - Load Balancer migration to AVI, Fail over strategy, Model development

• Helping with architecting future state Data Science platform in Thetalake. Environment: REL8, RAG Architecture, Anaconda, Jupyter Notebook, Orange, Python, Unix scripts, NLP models, Hadoop, HDFS, MapR, Spark, DR–Synthesys, Cognition, Groovy, IBM OSDS, Elastic Search, Oracle, Jira, GCP, Azure, AWS, Safe-Kanban etc.

#### **SOFTWARE & PLATFORMS**

Apache Hadoop • Distributions – Cloudera, Hortonworks • Spark • Hive • Pig • NoSQL-HBASE, Neo4J, Cassandra, MongoDB • ELK • Alteryx •Informatica Power Center, IDQ, Analyst, MDM• SSIS • ERWIN • Oracle • DB2 • Teradata • SQLServer • ATG •Websphere • Android • Linux • Windows • Scala • Python • R • Java • node.js • C/ C++ • WebServices (REST/SOAP) • Restlet • Cloud -AWS, IBM Bluemix • Mulesoft • Shell • Graphing • Visualization • Qlik• Tableau • Power BI • JavaScript • Node.js • Drools • Sparx Enterprise Architect • Rational Software Architect • Archi • Altova • TOGAF 9.0 •AGM • Jira • Component Business Models •ACORD •Frameworx • IBM OSDS • Digital Reasoning Synthesys • Cognition

# PROJECTS

#### Wells Fargo N.A. (Consulting)

- AIML NLP -- Critical projects
  - Data Pipelining & curation
  - Common Pipeline Architecture
  - Data Science experiments
  - Analytics Risk & Surveillance

#### **Boeing** (Consulting)

AI & Analytics -- Critical projects

NDA project

#### **Express-Scripts (Consulting)**

DataLake, Analytics -- Critical projects

- Call Transcription records
- Web Analytics data
- Design
- Analytics
- Big Data
- Ingestion Framework
- DevOps CICD Pipeline

#### FedEx Smartpost. (Consulting)

Big Data Analytics -- Critical projects

- Data Lake ETL using Spark Scala
- Data Flow Framework Spring

#### Ascension Health - Medxcel. (Consulting)

#### Big Data Architecture -- Critical projects

- Proof-of-Concept & Demo
- Enable Big Data
- Design & develop in Spark Scala

#### Fujitsu America Corp. (Consulting)

AI & Analytics -- Critical projects

- Predictive & Cognitive Analytics
- Big Data Innovation Lab

#### Boeing | Consultant Technical ARCHITECT | AI Middleware Integration

- Charleston, S. Carolina | Consultant Technical Architect
- Architected end-to-end solution and process flows for a specific Boeing AI product.
- Worked with Boeing Plant Manufacturing Technicians to gather requirements for usability.

• Established Technology Architecture for integrating Mobile Application in IPAD to Backend Data Science platform that generates Predictive data.

- Developed middleware code for a minimally viable product.
  - Web services and code development using Python
  - Utilized HDFS Datalake, Hive and HBase
  - Introduced Container based development & orchestration (Docker, Kubernetes)

Environment: Redhat Linux, Anaconda-Navigator, Spyder, PyCharm, SQLite, MySQL, Python, Hortonworks, Hadoop, Hive, HBase, Kubernetes, Cloud (AWS), Visio, Jira etc.

Express-Scripts | Big Data ARCHITECT | Hortonworks-Spark-Scala-Hive-HBase

Minneapolis, Minnesota | Consultant

- Developing Big Data Analytics platform using Hadoop Data Lake, ingestion framework etc.
- Contributed to building solutions in a Zone based reference architecture for the Data Lake
- Designed data models for Hive and HBase databases. Created Technical design specification
- Helped with planning on bringing various Data Sources into Hadoop Data Lake
- IVR Records, Call Transcription, Adobe Weblogs. Addressed storage formats, compression etc
- Developed Spark programs in Scala for transforming data between zones.
- Promoted Agile/Scrum methodology in Big Data Development.

Environment: Scala, Java, Sparkshell, HBase shell, Linux, Hortonworks, Hadoop, Ambari, Beeline, Hive, Visio, Jira etc

#### FedEx Smartpost | Big Data Analytics ARCHITECT | Data Analytics-Big Data

Milwaukee, Wisconsin | Consultant

- Contributed to defining the Technology Architecture of a Zone based Data Lake.
- Contributed to the Application architecture, design and development using Spark.
- Developed Scala code for data movement, ETL and populating of Hive tables.
- Contributed to Agile planning & managed offshore development through Agile-SDLC.
- Proto-typed a solution for a Data Ingestion Pipeline with Streams and batches of data using Spring Cloud Data Flow Framework.
- Architected solutions to fulfill roadmap directions on integrating ingestion framework. Environment: Hadoop, HDFS, Hortonworks HDP 2.5, Hive, Pig, Spark, Scala, Kafka, Java, Spring Data Flow Framework, Spotfire 2.6, Ab Initio, Oracle, PCF lab, AGM

#### MedXcel | Big Data ARCHITECT ADVISOR | Cloudera- Spark-Scala-Hive

Remote from Overland Park, Kansas | Consultant

- Worked on a Proof-of-Concept project for Ascension Health/Medxcel to enable Big Data
- Contributed to building solutions in a Zone based reference architecture for the Data Lake
- Designed data models for Hive and Impala databases. Addressed storage formats, compression
- Developed Spark programs in Scala for transforming data between zones.
- Developed Spark programs to load Impala tables from transformed data.

Environment: Cloudera CDH 5.12 cluster, Hive, Impala, Spark, Scala, MySQL, Microsoft Dynamics etc.

# PROJECTS (Continued..)

#### Americo Corp. (Consulting)

- Governance Solutions -- Critical projects
  - Data Catalogue|Quality|Lineage
  - Big Data/Hadoop integration
  - Standardize Reporting platform
  - Analytics

#### PAKSHI INC (Consulting)

Analytics & Report -- Critical projects

- Information Visualization
- Information Insight Generation
- Analytics
- Big Data

#### SPRINT CORPORATION

Premium Services -- Critical projects

- Digital Lounge
- Calltones Configuration
- Device Management
- Device Grouping
- Partner Portal, Workflow etc.
- Premium Content Care tool.
- Rules Engine using Drools.
- Analytics and Reporting
- Account Services -- Critical projects
  - Account Controls
  - Account Management Manage
  - Sprint Plan Optimizer (SPO)
  - Nextel Merger–AppRationalization
  - ATG Application Development
  - 4G/4G LTE Rollouts
  - Unified Billing Platform (AMDOCS)
  - P2K billing system integration
  - Plan & Rating (Blue Martini)
  - Fraud management Adaptive Auth
  - Loyalty Sprint Buyback
  - Sprint Infocenter

Embrace Mobility -- Critical projects

- mDotsprint.com, mDotSprint.shop
- Wireless Digital Lounge
- Sprint Zone
- Sprint TV using Mobi TV
- Integration & Data -- Critical projects
  - Common Object Server
  - Premium Service Infrastructure
  - WebService Integration Platform
  - QPASS Billing system integration
  - Integrate Real Networks, Livewire
  - Data Migration Websphere to ATG
  - Google Integration via web services
  - Softbank Int'l ID (ESB Mulesoft)
- Analytics -- Critical projects
- Web Analytics using Omniture Loyalty Services -- Critical projects
  - Sprint Buyback
- Platform Engineering -- Critical projects
  - IBM SPDE Portal framework
  - ATG e-Commerce suite
  - Qualcomm Senses Content platform

#### $Fujitsu \mid {\tt Big Data ANALYTICS ARCHITECT} \mid {\tt Analytics-Cloud-Big Data}$

Remote from Overland Park, Kansas | Consultant

- Created Innovation Lab for Analytics Big Data clustered environment
- Developed Spark programs as part of data cleansing and ETL.
- Built demo for Data Governance and MDM using Apache Atlas at Ford Motors.
- Built data pipeline from various Sources to Data Lake for Analytics at Ford Motors.
  - Evaluated Migration Architecture and utilization of Cloud services.
- Processed web logs using ELK stack to study operational errors of applications.
- Developed demo on Predictive Maintenance utilizing IoT for manufacturing clients.
- Created Architecture flows & developed a demo to predict-manage Cash at Registers.
- Developed ideas for Mindset Segmentation and architected solutions.
- Developed a proto-type to predict growth of Agriculture products (seeds, plants) using streams of Sensor data for Predictive Analytics.

Environment: Hadoop cluster, Alteryx, Power BI, ELK stack (Elasticsearch, Logstash, Kibana), Tableau, AWS, Azure, Fujitsu-K5, R, Kafka, Spark-Python, Scala etc.

### Americo Corp. | Tech SOLUTIONS ARCHITECT | MDM-Governance-Analytics

Kansas City, Missouri | Consultant

- Built Solutions to implement Data Governance (Enterprise Architecture initiative)
- Performed Analysis, Technology Roadmapping and Architected solutions.
- Architected and designed solutions to Big Data Analytics & Visualization.

Environment: Informatica Technology Stack(–Power Center,IDQ,Analyst), Hadoop cluster and built data movement processes – used Hortonworks and Cloudera distributions

#### SPRINT CORP. | SR. ANALYST | Data-Integration-SOA-Mobility-Web

Overland Park, Kansas

- Worked closely with Business for New Product Development Sprint Premium Services for eCommerce, Sprint Plan Optimizer, Fun Greetings, Connected Vehicle Platform etc.
- Created data models that satisfied Product Information Management (PIM) Product Hierarchy, Device Mapping and Personalization to Subscriptions.
- Designed the data structures to support Product Orders, Product Pricing, Product Licensing, Digital Rights and TDRs for Billing, Mediation and Settlements.
- Designed and architected numerous APIs and exposed web services to support Microservices and SOA architecture for serving numerous Business needs.
- Provided solutions, defined technical architecture and performed design to various aspects of Product Catalog design on wired and wireless sites Device Management, Product stocking, Licensing, Digital Rights, Revenue Share, Settlements etc.
- Utilized data from Analytics data from Omniture to present Products in 'What's Hot' Category.
- Prepared Product Template for Content Partners in Meta-Tag for Search Engines. Created Product Metadata to help optimize Search Engine & predictive search.
- Led the Architecture and design of a Web Service Integration Platform that exposes various services to the Product Catalog implemented in Websphere Commerce platform and crucial integrations using Sprint's Carrier Product Billing APIs Google, Softbank
- Led the design of several eCare & eCommerce systems and integrations. Used UML tools like Rational, Visual Paradigm & Sparx EnterpriseArchitect
- Led the design of Enterprise Service Bus services, Rules engine & ETL.
- Created SOAP & RESTful web services and specifications WSDL, RAML with respect to the APIs to the Product catalog (Taxonomy, metadata, and categories)
- Performed systems analysis, data modeling & solutions architecture –Artifacts Use cases, Architecture Blueprint, WSDL, interface mapping, datamodels.
- Led the migration of Product catalog–Websphere to ATG commerce suite.
- Embraced mobility with Analysis, Roadmapping, Estimation and Design.
- Followed various SDLC methods Waterfall/EDP, Agile/Scrum.

Environment: Websphere, ATG, Java, XML, JSON, Webservices–SOAP, REST, Mulesoft, Oracle, DB2, HP-UX, Redhat Linux, Rational Enterprise, Erwin, Altova

#### HALLMARK CORPORATION

- Datawarehouse -- Critical projects
  - Datawarehouse Re-architecture

#### SPRINT LOCAL

- Datawarehouse -- Critical projects
  - Built Network Datawarehouse

#### SPRINT PCS

- EAI -- Critical projects
  - Created Operational Data Layer
  - Created Enterprise Application Int.
  - Establish Standards

  - Billing System Conversion

#### HALLMARK CORP. | DATAWAREHOUSE ARCHITECTURE | **INTERFACE DESIGN | Consultant**

- Performed Logical design using Dimensional modeling techniques (STAR schema).
- Performed ETL design and development using Informatica.
- Multiple rollout of Reporting, ETL -- Informatica Power center and Analytics for Business Critical Systems with defined KPIs & business significant matrix
- Performed Object Oriented design using Rational Ross Software
- Created Data catalogues Data Dictionary, Erwin logical data models, Metadata.

#### SPRINT LOCAL | DATAWAREHOUSE / ODS ARCHITECTURE | ETL **DESIGN** | Consultant

- · Provided key solutions to Business problems, architected and led implementations
- Multiple rollout of Reporting, ETL utilizing Informatica Power center and Analytics for Business Critical Systems with defined KPIs and matrices.
- Created Number Management System Performed Logical design using Dimensional modeling techniques (STAR schema).

#### SPRINT PCS | DATA ARCHITECTURE | BT DESIGN | Development | Consultant

- Designed OLTP Data structures. Performed Logical Data modeling, Reverse Engineering etc.
- Authored Sprint PCS Development Standards. Utilized reference Architecture.
- Led efforts to create Development framework, formalized system and Data requirements.
- Designed interface Business transactions and APIs to enable REUSEs.

OTHERS – Fujitsu, US WEST, UPS, CUNA, SEALAND SHIPPING CORP., & Various | Software Engineer, DATA SPECIALIST, SYSTEM INTEGRATOR, OLTP, ODS & DATAWAREHOUSE, SOLUTIONS ARCHITECTURE, SYSTEM ANALYSIS, DESIGN & DEVELOPMENT July 1996–Dec 2000 | Various places in United States of America

# DETAILED PROFILE

Biju develops the information architecture for organizations to enable knowledge worker productivity, improve customer experience, and business decision making with accurate, timely, and consistent information, structured and unstructured, internal and external. My role includes working with senior executives of the enterprise and service architects, technology brokers, business partners, and external service providers, to ensure new capabilities that comply with the information architecture.

#### DOMAIN

Telecommunications: Over 10 years experience in all facets of this industry. A subject matter in ReferenceArchitecture in Telecommunication-SID & FRAMEWORX. Insurance: Over 2 years experience with expertise in Industry models like ACORD Logistics: Over 4 year experience with expertise in Industry models. Retail: 1 year experience with expertise in Industry models like ART.

Banking: 5 year experience in Risk & Surveillance. Utilized Industry model BIAN Other: Over 3 years experience on other industries that include Auto, Manufacturing, Bio-Technology, Trucking and Healthcare.

Innovations: Experience in the New Product Development for more than 5 years promoting innovation and Business Development taking into account Time to market, Methodology, Mobility, Remote Setup, Virtualization, Personalization, Policies & Rules, Legal, User Experience, Finance-Profitability/Cost/Investments, Skill Development & Operations.

Innovation ambassador with Network Leadership program

Product Owner of Wells Fargo Market & Trade Surveillance Technology eComm

## IMPORTANT CERTIFICATES CAPABILITY HIGHLIGHTS

- Several Technical courses with Atos university – Cloud (Azure, GCP, AWS), Kafka streaming, ML-Python, Docker, Kubernetes, GoLang, MongoDB etc.
- Python Programming Certificate (2016)
- Informatica Analyst, IDQ Certificates (2016) (Informatica University)
- Big Data, Hadoop, NoSQL, Hive and Pig Certificates (2015)
- Certificate in R Programming, Data Science and Visualization (JOHN HOPKINS UNIVERSITY BLOOMBERG SCHOOL - 2015)
- Oracle Performance Tuning (2015)
- Mobile Development using Titanium Studio (2013) (**Appcelerator**)
- Omniture Site Catalyst (2010) (Omniture Analytics)
- ATG e-Commerce Suite (2008) (ATG)
- IBM Websphere Portal Development & Management (2005) (IBM)
- Java/J2EE (2004) (Sprint University)
- Unix Networking (2003)
- Oracle DBA (2002)

#### LEADERSHIP

GRADUATED - SPRINT NETWORK LEADERSHIP PROGRAM (1 Year program) CORE TEAM LEAD - SPRINT NETWORK

LEADERSHIP PROGRAM

## REFERENCES

Available on request

#### tos /S), ANALYSIS, DESIGN, DEVELOPMENT, SOLUTIONS ARCHITECTURE,

- DATA MANAGEMENT & LEADERSHIP ACTIVITIES PERFORMED
  Following several Data Science architectures like Retrieval Augmentation Generation
- (RAG) utilizing generative AI & Large Language model, NLP etc.Working to establish architecture and build processes & data curation steps to the
- effective functioning of a Common pipeline Architecture for AIML & NLP works
- Experimented NLP based Data Science models, Key Indicators and Knowledge Graphs concerning sentence boundary extraction, Region detection.
- Machine Learning & Deep Learning Models: NLP, Decision Trees, Random Forest, CNN, Transformers. Contributed to develop models to Alert on Anti-money laundery,
- Subject Matter Expertise in NLP AIML pipelining, filtering and transformation
- Architected a Speech Analytics solution involving Data Science & AI models
- Developed solutions in Analytics utilizing Data Science platforms & frameworks like Synthesys & OSDS, Big Data, Cloud services, IoT, machine learning etc.
- Programming Languages & Frameworks: Python, R, TensorFlow, Keras, PyTorch, Scikit-learn, Pandas, Huggingface models, Docker, Kubernetes etc.
- Developed Architecture for Data Governance based on PAID principles (Process-Application-Integration & Data) on 4 Pillars (Glossary, Lineage, Quality & Security).
- Designed web services, APIs and Data components that map into SOA frameworks
- Developed Analytics platform for Trucking Predictive model using R & Python
- Implemented Solutions Cloud (AWS, AWS, GCP), Streaming Nifi, Flume, open Databases (MySQL,Derby), Hive, Pig, Spark, Mapreduce, Hadoop HDFS, NoSQL databases( HBASE, MongoDB) etc.
- Following SDLC Agile methodologies Kanban & Scrum
- Enabled Visualization and Reporting utilizing Tableau
- Scoped requirements and Created user stories. Followed activities like grooming the backlog with the Scrum Master and Product Owner.
- Developed strategies, performed analysis & created requirements on mobility projects
- Performed analysis, developed solutions and created Architecture Solutions.
- Created data requirements, performed mapping and monitored data activity
- Developed Master Product data catalog on Premium Service contents
- Defined criteria, access rights, and permissions. Developed and controlled access, usage and integration strategies.
- Led Performance & Tuning by proactive Monitoring of tasks to improve SLAs Database, APIs, Network etc
- Developed various artifacts like user stories, use cases, Architecture Blue prints, process models, sequence models, data models etc.
- Hands on Development using ETL, Mulesoft (ESB), Java, R, Python
- Established process for quality assurance & traceability over Product development
- Created the information architecture & management strategy for organization
- Ensured that information architecture and management strategy creates a foundation for future investment in business intelligence & collaboration
- Architected and designed Enterprise Architecture Integration (EAI)
- Architected and designed Datawarehouse, ODS and BI reporting.
- Supported business and IT capabilities for managing and integrating unstructured information across media platforms i.e., wikis, blogs, instant messaging, etc. and traditional sources such as e-mail and SharePoint.
- Collaborated with user experience specialists to develop design specifications to improve performance, usability, and effectiveness of customer facing interfaces.
- Maintained a holistic view of information assets by creating and maintaining blueprints that illustrate how information is stored, processed, and accessed

#### SIGNIFICANT RECOGNITIONS & AWARDS

2006-14	Top 5% contributor	Sprint i-Recognize Awards (Multiple)
2014	Ambassador	Sprint Startup Accelerator for Innovations
2013	3 <sup>rd</sup> place winner	Startup Accelerator on "Augmented reality"
2008	1% Best Performer	Director Cash Award
2022	Major Contributer	WF Time critical Product Upgrade
2023-24	4 i-Recognize Awards	Various

#### SUMMARY

Has a proven record record as data scientist in conceptualizing and deploying innovative AI solutions, including generative AI models. His expertise spans the entire data lifecycle, from data acquisition and preprocessing to the development, validation, and visualization of predictive models. He is adept at leveraging the AWS cloud platform to architect scalable and efficient machine learning pipelines.

#### **TECHNICAL SKILLS**

Category	Skills
Data Science & ML	Linear Regression, Logistic Regression, Random Forests, Decision Trees, K-
	Means Clustering, KNN, Naive Bayes, Neural Networks
NLP Techniques	LLM (GPT 3.5 Turbo), Whisper, BERT, LSTM, Aspect-based Sentiment Analysis,
	Topic Modelling.
Programming & Scripting	Python, R
Libraries	NumPy, Pandas, SciPy, Matplotlib, Seaborn, TensorFlow, Keras, Scikit-learn,
	NLTK.
Data Visualization	Tableau, Power BI, Matplotlib, Seaborn
Cloud Computing	AWS (EC2, S3, SageMaker), Google Cloud (BigQuery)

#### **PROFESSIONAL EXPERIENCE**

#### Augmented AI (January 2023 – Present)

#### **Data Scientist**

- Developed a chatbot using RAG framework to enhance data retrieval and provide contextually relevant responses, significantly improving the accuracy and relevance of warehouse operations. This application has helped reduced time spent on customer responses by 25%.
- Developed, trained, and deployed inventory prediction model using AWS SageMaker, which helps in optimizing warehouse operations.
- Performed aspect-based sentiment analysis of customer support data using BERT.
- Implemented advanced quality control checks using machine learning algorithms to ensure high order accuracy, reducing error rates by 30%.
- Implemented GenAI based search for audiobooks client using GPT-3.5 Turbo and OpenAI Whisper to convert audio content into searchable text.

#### **<u>FNR Solutions</u>** (February 2022 – December 2022)

#### Data Scientist

- Identifying potential fraud and enhancing security measures by using anomaly detection models.
- Identified and capitalized customer segments by analyzing purchasing behavior.
- Facilitated targeted marketing strategies and created personalized customer experiences using customer segmentation techniques.
- Developed customized fulfillment processes that enhanced operational efficiency and customer satisfaction by analyzing order patterns and group similar customers.

#### **<u>EITE Pvt Ltd</u>** (Jan 2021 – Dec 2021)

#### Data Analyst

- Analyzed vehicle insurance claims data to identify patterns and trends in claim frequency, severity, and loss ratios.
- Developed targeted marketing strategies and personalized offers to attract and retain customers.
- Developed interactive dashboards using tableau.

#### **CERTIFICATIONS & AWARDS**

- AWS Certified Cloud Practitioner.
- **PEGA** Certified System Architect (CSA).
- **PEGA** Certified Senior System Architect (CSSA).

#### **Data Visualization and Full Stack**

#### Engineer

#### **Summary**

As a Full Stack Developer at Augmented AI, he specializes in integrating advanced AI technologies into scalable web applications. With hands-on experience in React, Node.js, Python, and Flask, he has successfully developed and deployed AI-powered solutions such as customer intelligence applications and customer support chatbots. His work focuses on enhancing user experiences through generative AI and ensuring robust, scalable infrastructure on cloud platforms like AWS and GCP.

#### <u>Technical Skills</u>

Languages	Python, SQL
Developer Tools	Git, Docker, VS Code
Cloud Platforms	AWS (EC2, S3, Lambda), GCP (Storage,
	Compute Engine), Azure
Full Stack Technologies	React.js, Node.js, JavaScript, HTML, CSS,
	Flask

#### **Experience**

Full Stack Developer – Augmented AI, Austin, TX(June 2023 – Present)Customer intelligence Application with Generative AI Integration | React, Node.js

- Developed a customer intelligence application used by business users to perform customer research and gain actionable insights using React for the frontend and Node.js for the backend, ensuring a seamless user experience and efficient server-side processing.
- Integrated generative AI functionalities to the application to deliver personalized product recommendations and dynamic content generation, enhancing user engagement and satisfaction.
- Utilized RESTful APIs to enable efficient communication between the frontend and backend services, ensuring smooth data flow and near real-time updates.
- Deployed the application on AWS, leveraging EC2 for compute resources and S3 for storage, ensuring scalable infrastructure, high availability, and optimal performance.

• Conducted thorough testing and debugging to ensure the platform's robustness and reliability, achieving a 99% uptime during the deployment phase.

Al-powered Customer Support Chatbot | React, Node.js, TensorFlow

- Built a Proof-Of-Concept customer support chatbot by integrating large language models (LLMs) enhancing the system's ability to process and respond to natural language queries with improved accuracy and relevance.
- Collaborated with customer service teams to continuously improve the chatbot's accuracy and response time based on user feedback.

#### **Software Developer** - Cognizant Technology Services (Apr 2022 – May 2023)

Dockerized Search Engine for Image Search with gRPC | Python, Flask

- Developed a web application using Flask to search for labelled images based on user keywords.
- Utilized gRPC for efficient communication between the web app and a Dockerized image search service.
- Implemented Docker for containerization, ensuring a portable and scalable solution.
- Aligned the application architecture with customer requirements for better scalability.

#### Google Maps | GCP, Python

#### (May 2020- Mar 2022)

• Assisted in managing and optimizing GCP infrastructure used for storing, processing, and delivering Street View imagery, including basic configuration and monitoring of Compute Engine and Cloud Storage.

• Developed python scripts to streamline cloud operations, such as processing Streetview imagery data, reducing manual intervention and improving efficiency by 30%.

• Collaborated with Google Maps' teams to identify and resolve performance bottlenecks and service disruptions in the Street View pipeline, contributing to a 25% improvement in data processing times.

#### Certifications

- Oracle Cloud Infrastructure 2024 Generative AI Professional
- AWS CERTIFIED SOLUTIONS ARCHITECT ASSOCIATE

#### **ML Engineer**

#### **SUMMARY**

Highly accomplished Microsoft-certified IT professional with over 17 years of experience in project leadership, software development, and solution architecture. Demonstrated expertise in managing complex technical projects, optimizing software performance, estimation, and mentoring teams. Skilled in full-stack development, Azure, and Agile project management. Microsoft evangelist.

#### SKILLS

- Project Delivery
- Full-Stack Development
- Software Solution Architecture
- Agile Project Management
- Microsoft Azure
- Microsoft PowerApps
- Microsoft Visual Studio
- Microsoft TFS
- AWS
- Git

- Angular
- Microsoft .NET
- Microsoft ASP.NET Web API
- Microsoft Blazor
- Microsoft Entity Framework
- Microsoft MSTest
- NUnit
- Selenium
- Python
- Map Reduce
- Kafka

#### • C#

- Hadoop/HIVE/HDFS
- JavaScript
- TypeScript
- HTML
- CSS
- Swift
- Microsoft SQL Server
- SSIS
- SSRS
- Oracle

#### **EXPERIENCE**

#### Avanade, Inc.

#### Group Manager-ML (Dec 2019 – Current)

- Technical Lead, Texas Medicaid
  - Successfully led and coordinated six onshore teams in the execution of Agile SDLC methodologies;
  - Played a pivotal role as the Application Architect for the development of the Long-Term Care client and provider metrics dashboard;
  - Estimated high- and low-level updates to current and future work streams of over 10,000 hours;
  - Headed the technical interviewing and onboarding process for over \$2,000,000 of staffing resources.
- Application Architect, Chevron

Refinements on Scrum, Angular & Azure ASP.NET Web API

- Streamlined project management processes by leveraging Scrum methodologies, ensuring efficient team collaboration, and timely project deliveries;
- Demonstrated a strong aptitude for Angular development, enhancing user experiences through responsive and interactive web interfaces;
- Utilized Azure cloud services to optimize ASP.NET Web API performance, resulting in improved scalability and responsiveness for critical applications.
- Collateral Duties, Avanade
  - Estimation provided high- and low-level estimations for upcoming projects, ensuring accurate and reliable forecasts for project planning and execution.

Sep 2006 – Current

- Hiring spearheaded the evaluation process for prospective Avanade technical team members, conducting initial and advanced interviews to identify top talent aligning with the organization's goals.
- Career Advisor guided and facilitated career growth and progression of 10 advisees, leveraging expertise and insights to empower their professional development within the organization.

#### <u>Manager</u> (Dec 2011 – Nov 2019)

- Delivery Lead, Wisconsin Energy Corporation
  - Gas Assets Compliance Software Re-Platforming Project
  - Led and directed four cross-functional onshore and offshore teams to successfully re-platform the Gas Assets Compliance software;
  - Oversaw the consolidation and modernization efforts, aligning the software with the parent company's standards and accommodating the unique requirements of four newly acquired subsidiaries;
  - Crafted and executed a strategic vision for the project, overseeing every phase from inception to implementation, resulting in improved efficiency and compliance across the organization;
  - Fostered strong onshore and offshore collaboration, ensuring seamless communication, coordination, and knowledge transfer, which played a pivotal role in the project's success.
- Delivery Lead, Davis Vision
  - PLEXIS Set-Based Operations Redesign Project
  - Led the team through the end-to-end design, development, and testing phases of the PLEXIS set-based operations project, with the primary objective of enhancing the throughput of member information file processing within the PLEXIS system through SSIS and SQL Server integration;
  - Orchestrated a redesign that yielded a 1400% increase in performance, significantly enhancing operational efficiency;
  - Managed team-client interactions, ensuring clear communication, addressing client needs, and maintaining client satisfaction.
  - Managed the project timeline and deliverables, overseeing critical milestones, resource allocation, and budgetary considerations to ensure successful project completion.
- Team Lead, Accenture Public Health Platform (APHP) QDS EDI X12 Performance Rewrite
  - Led a collaborative, cross-continental team consisting of both onshore and offshore members in the design and successful implementation of the QDS EDI X12 performance rewrite using .NET;
  - Assumed responsibility for maintaining and enforcing high code quality standards, achieved through rigorous code reviews and a strict code coverage unit test regimen.
- Technical Lead, Texas Medicaid
  - Extended a custom workflow design to enable the development of a public-facing web application, replacing numerous medical forms and automating patient file record-keeping;
  - Coordinated workflow implementation across two concurrent projects and managed development teams for both;
  - Trained BAs and junior developers.

#### <u>Senior Software Consultant</u> (Dec 2008 – Nov 2011)

- Lead Software Developer, Clean Harbors
  - Oversaw the initial design and implementation of a dynamic Silverlight portal for repair and maintenance request submission and management for industrial machinery and automotive fleet;
  - Daily liaison to the offshore development team.
- Software Developer, Duke Energy
  - Responsible for the development of custom ASP.NET forms to handle monthly and yearly data inputs that the LODESTAR billing solution did not accommodate natively;
- Responsible for all deliverables spanning the project lifecycle.
- Software Developer, Texas Medicaid
  - Designed and implemented updates to a public-facing web application that processed long-term care forms;
  - Designed and implemented a custom workflow framework, extending MS WF to alleviate existing workflow shortcomings to improve application performance and scalability;
  - o Designed and implemented auxiliary web services and proxies for the Microsoft Dynamics CRM project;
  - Contributed to design and code reviews and actively mentored several junior developers.
- Software Developer, ConocoPhillips
  - Led a team of three in the design and implementation of oil & gas wells review functionality;
  - Developed a modular widget-based WPF desktop application that permits engineers to track and evaluate health of oil and natural gas wells;
  - Redesigned the application's UI visual layout, designed, and implemented oil & gas wells search functionality;
  - o Redesigned widget framework and initiated the design of various widgets and widget components;
  - o Authored a series of Technical Standards and Best Practices documents for the development team.

### <u>Software Consultant</u> (Sep 2006 – Nov 2008)

- Texas Medicaid
  - Designed ancillary software, developed and maintained front-end C# processes, back-end database processes, web services, and reporting services.
  - o Integrated interactive maps into client's application through the Google Maps API.

### EDUCATION

### **B.S. in Computer Engineering**

### **CERTIFICATION/TRAINING**

- Microsoft Certified: Azure Fundamentals
- Microsoft Certified Professional Developer: Enterprise Application Developer

## **Primary Skills**

### **Cloud Services**

**AWS** - S3, Redshift, RDS, EC2, EMR, Athena, CodeBuild, CodePipeline, CloudFormation, SQS, IAM, Lambda, SNS **GCP** - BigQuery, Cloud Storage, Pub/Sub, Kubernetes Engin Functions

### Programming Languages:

Python (primary), Shell Scripting, Java

Frameworks/Libraries:

Django, Django-REST, Pandas, PySpark, Spring

Database Management:

MySQL, PostgreSQL

**Orchestration Tools:** 

Apache Airflow, Docker, Kubernetes

**Project Management:** Jira, Trello, Service Now

CI/CD:

Jenkins, Drone, Argo CD

**Configuration Management:** 

Ansible, Terraform

CDN: Fastly

ETL: Informatica, Datastage

Observability:

Sumologic, Datadog, Newrelic, Grafana

Package Repository:

Nexus | Artifactory

Product Development: Agile Project

Secrets and Certificates Management:

Hashi Vault

Version Control:

Github, Clear Case, Perforce

## **EDUCATION**

KnowHub | 2021 Data Science Immersive Bootcamp

**JNTU University India** | 2004 Bachelors in Computer Science

## **Summary of Qualifications**

A highly technical individual with expertise in a diverse range of technologies. Demonstrated ability to communicate proficiently. Solid programming background, capable of learning new skills at every opportunity. Results oriented person with proven ability to accomplish projects in a timely fashion. Demonstrated excellent problem solving skills. Extensive knowledge in the full life cycle of solution development included requirements gathering, proof of concepts, design, testing and maintenance.

### Experience

# THE NEW YORK TIMES, NYC

August 2016 – Present

• Led the migration of the commerce portfolio of systems from a private data center to AWS and GCP offering This included migration from IBM MainFrame, Solaris and Linux systems

• Designed and engineered CI/CD pipelines with IaC for Configuration management and provisioning with Terraform and Ansible in AWSPython, Bash and Batch scripting.

• Designed and engineered a DevOps Strategy based on Ansible and Amazon Web Services.

• Developed and maintained a system to allow non New York Times Business Partners to create, update and cancel subscriptions of bundling offers

• Define, Educate, Enable and Enforce Standards with SDLC

• Standardized Infra Tooling across commerce platform groups and Designing highly available. Scalable, Secure, Optimized, and compliant cloud infrastructure

• Help scaled our platforms for 20x customers as part of election day effort. Maintained site uptime and improved multi-environment performance, reliability, availability and scalability. • Improved RDS Scalability, performed upgrades, scripted database deployments with flyway, standardized administration of users.

• Led cloud costs optimization across the platform

• Led a team and took full ownership of the APIGEE

API Gateway solution used by the Organization

• Standardized Infra Tooling across missions and Designing highly available. Scalable, secure, optimized, and compliant cloud infrastructure

• Technical liaison between Product Owner and Application teams.

#### NYK LINES, NJ

August 2011 - July 2016 Lead DevOps Engineer

• Managed a small team of four DevOps Engineers to maintain site performance and ensure the successful deployment life cycle across multi-functional teams.

• Dockerize applications and migrating them to kubernetes

• Provide Guidance and support to team to enable them to release code continuously and confidently

• Developing automation scripts/tools and implementing complex CI/CD processes.

• Designing network architectures, configuring and deploying different physical and virtual network appliances.

#### MOODY'S, NYC

April 2009 - June 2011 RELEASE ENGINEER LEAD

• Designed and implemented a fully automated CI/CD pipeline, reducing deployment time by 50% and increasing deployment frequency by 75%.

• Collaborated with development teams to implement infrastructure as code, resulting in a 30% reduction in infrastructure costs and a 20% increase in system reliability.

• Developed and maintained monitoring and alerting systems, reducing mean time to resolution (MTTR) by 40% and improving system availability by 25%.

#### JOHN HANCOCK, BOSTON

September 2008 – February 2009 RELEASE ENGINEER

• Maintained the build and release process of a monolithic lithic Java application with Jenkins. Redesigned and supported the underlying on-premises

infrastructure. Helped build a fully automatic QA process with unit tests, nightly builds and Selenium tests.

#### **TUI FLY, GERMANY**

October 2005 - June 2008 RELEASE ENGINEER

• Administering in setting up and maintenance of Perforce Server, Broker, Web and Proxy Services, User Management, Trained Users & Backup/Recovery of Perforce Version control.

• Performed Source Code migration from other SCM tools into Perforce.

• Implemented Bugzilla as a change management tool for the core platform teams.

• Created and maintained fully automated CI/CD pipelines for code deployment.

Worked in onsite/offshore model supporting

multiple applications as production support engineer.

• Acted as the primary role in triage of any build, deployment and testing errors or failures.

#### **CITI BANK, INDIA**

November 2004 – October 2005 CONFIGURATION ENGINEER

 Using and Administering of Version control (VSS & PVCS) and Change control tools (team track). An experienced healthcare executive with more than 31 years of IT delivery, financial and data analytics related experience. Proven history of building trusted customer relationships through successful delivery, integrity, and a unique combination of business and technical skills. Extensive experience in system architecture, solutioning, estimating, building delivery teams, and IT project sales.

# EXPERIENCE

# APR 2014 – CURRENT

# PROGRAM/DELIVERY MANAGER, ACCENTURE

Manage multiple delivery teams totaling 30+ FTE consisting of project managers, solution/application architects, developers, and business analyst for developing, maintaining, and operating the Texas Medicaid Data Warehouse and Electronic Data Interchange (EDI) with annual budgets of \$10M+. Sold contract change orders to meet financial targets and maintain work pipeline to support ongoing staffing levels. Accountable for client satisfaction, solutioning, estimating, staffing, forecasting, development of delivery leads and solution/application architects.

## SEPT 2004 - MAR 2014

# SR. APPLICATION ARCHITECT, ACCENTURE

Solutioned, estimated and implemented multiple data warehousing projects for the Texas Medicaid Data Warehouse. Responsible for leading development teams and other architects to deliver new development, modifications, and maintenance. Built the Texas Medicaid Data Encounter Warehouse to support the states expansion into Managed Care. Leveraged strong customer relationships to sell additional projects to incorporate the Managed Care Encounter data into other state financial systems.

## APR 1996 – APR 2004

# TECHNICAL ARCHITECT/SYSTEMS ENGINEER, ELECTRONIC DATA SYSTEMS (EDS)

Technical lead, responsible for the creation of five Texas Medicaid financial systems to support rate setting and analysis for Texas hospitals. Led a team responsible for defining, analyzing, designing, coding, and implementing systems to convert legacy COBOL systems to Tandem/HP NonStop platform. Created data conversions from an IBM source system to Tandem using ETI Extract, wrote extract programs using C and Tandem Dataloader and reporting programs using COOL:Gen and Report Composer. Performed system monitoring, abend and defect resolution and project management.

## FEB 1991 – MAR 1996 FINANCIAL/RISK ANALYST, ELECTRONIC DATA SYSTEMS (EDS)

Analyzed and forecasted trends for Texas Medicaid expenses and eligibility. Evaluated the impact of state and federal regulation changes to the Medicaid program. Negotiated annual premiums with the Texas Department of Health. Monitored account production and prepared management reporting. Performed financial desk review audits of Texas Medicaid providers.

# **EDUCATION**

MAY 1995

BACHELOR OF BUSINESS ADMINISTRATION, THE UNIVERSITY OF TEXAS AT AUSTIN

# SKILLS

- Program/Project Management
- Solution Development/Selling
- Project Estimation
- Project Delivery
- Enterprise Architecture
- Resource Management

- Leadership
- Medicaid
- Data Warehousing
- Data Analytics
- Hospital Reimbursement
- Healthcare IT

## **KEY IMPACT AREAS**

#### -----

- ML and Deep Learning for NI P
- Ethical & Responsible AI
- Conversational Cognitive AI
- Platforms
- Core and Digital Banking
- Technology R&D Leadership
- **Digital Transformation**
- **Building Production grade**
- LLMs
- Explainable AI
- Al Risk Management,
- Governance & Audits
- AI Advisory
- Enterprise AI Strategy
- Industrialization of GAI &
- LLMs
- Algorithmic Ethics
- AI Policy Management &
- **Regulatory Compliance**
- Data Privacy & Governance
- GDBR, Data Science, EBS
- ESG Data Management
- Data Pipeline Engineering &
- MLOps
- Predictive Analytics
- **Enterprise Governance, Risk** & compliance
- Ontology Engineering
- FlexCube -UBS & OFSAA
- **Global Product Delivery**
- Management
- P&L Management
- Sales and Pre-sales
- Consulting Practice Line
- Management
- AI Thought Leadership-
- **Knowledge Graphs**
- Graph DBs
- CMMI

## **EDUCATION**

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**Doctoral Research - Ph.D. in Computer Science | Machine** Learning Jain University -Bangalore (2019)

**Advanced Management Program** (AMP) **IIM Bangalore** (2008)

**MS. in Software Systems** BITS Pilani (1994)



Multicultural experience 140+ BFSI Customers

Technology thought leader at the across 56 countries serving intersection of Banking, ML & DL, Enterprise GRC & AI Ethics and Responsible AI





Development of AI-driven CGI-based Teacher Avatar using Transformer models

Blend of Corporate, Applied Research, Entrepreneurship & Academic experience

Corporate entrepreneur and recognized technology & AI thought leader with over 25 years of progressive experience driving innovation across artificial intelligence, machine learning, data science, cognitive computing, Core Banking, Product Engineering, Analytics and next-generation technologies. Pioneered cutting-edge solutions in Ethical AI Governance frameworks, Responsible AI platforms compliant with global regulations, Cognitive conversational AI systems for intelligent digital interactions, state-of-the-art generative AI and large language models, enterprise risk and compliance management, Al-powered digital transformation initiatives, and AI strategies & ESG data management. Spearheaded the development of industry-leading AI ethics platforms integrating advanced data privacy, explainability, auditing/compliance capabilities, and ethical AI model development principles aligned with GDPR and the Data Governance Act.

Displayed success in orchestrating groundbreaking R&D in Gen AI/LLMs leveraging techniques like retrievalaugmented generation, transfer learning, multimodal agents and domain adaptation to deliver context-aware NLP applications. Architected enterprise-grade conversational AI solutions under-pinned by NLU, dialogue management, and data mining for real-time personalization across banking and education domains. Led corporate AI strategy roadmaps, MLOps, data pipelines, model governance, and embedded ethical AI into business processes. Pioneered AI/ML innovations for core/digital banking platforms and deep learning for NLP tasks. Directed IT governance, process transformation, and regulatory compliance aligned with CMMI, SOX, ISO, and operation- all risk frameworks. Established as a thought leader through authoring white papers, delivering keynotes, and contributing to AI ethics policies and responsible AI governance.



- Acknowledged as a Thought Leader with a distinguished record of presenting papers and speaking at international conferences on Data Science, Machine Learning, AI, Ethical AI, Cognitive Architecture, Data Mining, Conversational AI, IT Governance & Transformation, Enterprise Risk & Compliance, ESG Data Management, Generative AI, LLMs, and CMMI.
- Demonstrated strategic leadership with expertise in mentoring multifunctional and cross-cultural Custom Development, Consulting, and Implementation Teams at Senior Director & VP levels across diverse geographical locations and time zones.
- Documented success in Core & Digital Banking Product Engineering, Product Surround Professional Services, Product Management, Presales, Data and AI Scientists, Implementation, Product Professional Services, Account Management, Consulting, and Leadership Oversight for more than 140 BFSI customers across 56 countries.
- Strong proficiency in programming languages such as Python, R, Java, or Scala, along with experience working with data science libraries and frameworks (e.g., TensorFlow, PyTorch, scikit-learn)

# **KEY ACHIEVEMENTS**

- Pioneered the conceptualization, design, and development of an AI-driven model for predicting student performance and interventions, while also enabling predictive modeling for student career options.
- Spearheaded the conceptualization of a digital transformation program for a major bank, focusing on the
- development of a multi-channel application incorporating Social and Analytics channels. Boosted the revenue fold by revitalizing the product integration business, particularly with Flexcube and Oracle Footprint Deals.
- Innovated multiple digital and mobile prototypes through UI/UX studio & Design factory, resulting in substantial client acquisitions.
- Led the global delivery management of Flexcube Product Suite Integration and other key Oracle footprint products such as EBS, Siebel CRM, OFSAA, and Surround Services engagements, achieving minimal customer escalations.
- Engineered a functional prototype of an AI-driven CGI-based Teacher Avatar supported by a Cognitive Conversational AI platform, delivering meta-data tagged content for highly personalized course delivery.
- Implemented Intellect's Digital Banking product for three global customers with complex needs, setup a referenceable customer base.
- Established an ODC in Bangalore as part of the senior management team for a leading European Tier 1 multinational bank.
- Solely managed a consulting engagement program to establish an ODC in Bangalore for a Tier 1 US Multinational Bank.
- Incubated and cultivated the Governance, Risk & Compliance Consulting Practice for OFSS Consulting, achieved rapid growth with the acquisition of the 100th customer, and sustained 100% revenue growth for 5 consecutive years.
- Maintained an impressive avg. operating margin of 35%, with 80% of business stemming from repeat clients, underscoring high CSAT.
- Established accounts across various countries for OFSS, facilitating cross-selling of the OFSS Footprint of products and services.
- Secured numerous high-value business deals for OFSS Consulting, including the first million and multi-million-dollar deals, and expanding into new strategic accounts and markets.
- Conducted CMMI-based model appraisals as Lead Appraiser.

*[***?**]

Program Managed a SOX Compliance Project for the top multinational global bank, covering 17 globally distributed businesses.

# **PROFILE SUMMARY**

# CAREER CONTOUR

### Chief Al Scientist • July 2021 - Present Aaquarians.ai (an Al Product start-up) - Dubai, UAE

- Developed AI ethics and Responsible AI SaaS platforms complying with regulations like the EU AI Act, the US AI in Government Act, India's National AI Strategy, the UK's AI Code, and Singapore's Model AI Governance Framework.
- Guided building LLM-based applications using techniques like RAG, fine-tuning pre-trained models like Falcon, hyperparameter tuning, model architecture refinement, data preprocessing, domain adaptation, and task-specific optimization for context-aware NLP.
- Led research, prototyping, experimentation, and production development for key initiatives and products.
- Partnered closely with cross-functional teams, including technology and business stakeholders, to define project requirements.
- Developed predictive models, algorithms, and data-driven solutions to optimize business processes, improve process transparency, and drive strategic decision-making.
- Advised executive leadership and clients on Corporate AI Strategy, Generative AI Use cases, Data Strategy, Privacy & Governance, ESG Data Management, and mitigating AI deployment risks as part of AI & Data Science Consulting.
- Oversaw a team of AI researchers, ethicists, and engineers in designing AI governance solutions.
- Developed data governance and privacy features compliant with GDPR and the EU Data Governance Act to uphold individual rights and mitigate AI risks.
- Positioned Aaquarians.ai as a thought leader in AI ethics, governance, and privacy, delivering keynote presentations and participating in industry conferences.
- Designed AI model explainability frameworks using techniques like LIME and SHAP for decision validation while maintaining privacy.
- Engineered automated audit & compliance tools aligned with regulatory frameworks like the EU AI Act, US AI in Government Act, Facilitated successful product launches, GTM strategies, and funding efforts, driving company growth and market penetration.
- **Research Advisor** Feb 2024 Present Center for Responsible AI, IITM (an interdisciplinary research center at IIT Madras)
- Global Member • Multistakeholder Experts Group (MEG), Dec 2023 Present, Global Partnership For

AI (GPAI) is a multi-stakeholder initiative that aims to bridge the gap between theory and practice on AI by supporting cutting-edge research and applied activities on AI-related priorities.

Adjunct Faculty: Dept. of ISE • Jul 2019 – Jun 2023, New Horizon College of Engineering

- Research Group Member (Remote) Aug 2022 Dec 2022, Center for AI and Digital Policy
- Chief Product Officer and AI Scientist Sep 2020 June 2021, GEMS Education Dubai, UAE
- Demonstrated leadership attributes in developing the GEMMA, an avatar utilizing BERT-based models for real-time.
- Played a key role in designing a conversational AI interface using BERT embeddings for dialogue and contextual understanding.
- Implemented deep neural networks with attention mechanisms for adaptive learning based on student performance.
   Engineered a reinforcement learning framework using contextual bandit algorithms for real-time content adaptation.
- Developed transformer-based models for semantic understanding and automated feedback in adaptive assessments.
- Utilized Bayesian optimization and evolutionary algorithms for optimizing neural network performance.
- Established a knowledge graph integrating semantic embeddings for personalized learning pathways.
- Averaged Transfer learning from BERT for accelerated model convergence in educational applications.
- Collaborated on interpretable ML models and tools for student learning insights and intervention strategies.
- Devised AI strategy for educational products, and integrated AI to enhance learning outcomes across diverse curriculums.
- Led multidisciplinary teams in agile development of educational solutions aligned with curriculum standards.
- Cultivated strategic partnerships with educational institutions, content providers, and AI tech vendors to enrich product offerings.
- Directed Product Engineering, Architecture, Management, Deployment & support functions across multiple products.

Bankbuddy.ai • Apr 2017 – Sep 2020

Dec 2017 – Aug 2020 Chief ML / Data Scientist Apr 2017 – Dec 2017 CTO

- Led development strategy and technology direction in AI, ML, Cognitive Computing and DL, focusing on advanced solutions emphasizing R&D in Big Data, predictive voice, graph databases, real-time data streaming, AI governance, explainable AI, & NLP for conversational AI platforms.
- Directed AI, and ML departments, set strategic direction, and defined objectives aligned with the Bankbuddy's vision.
- Led Data Science initiatives such as a vision for leveraging data science, Innovation, Data Strategy, Algorithm Development deployment, Cross-Functional Collaboration, Performance Monitoring and Improvement, Customer Insights, User Experience. Compliance and Risk Management, Regulatory Compliance to standards, such as GDPR, CCPA, Risk Management, Communication, and Advocacy.
- Collaborated with & drove the development of advanced AI capabilities that are both innovative and commercially viable.
- Led the CTO function to shape the Product & Technology vision, Engineering approaches, roadmaps, successes, and outcomes to stakeholderers, including internal teams, clients, and partners.
- Defined AI vision, R&D roadmap, and developed standardized solution components to accelerate customer delivery.
- Provided advisory services to BFSI customers in the areas of AI Strategy, Data Privacy, Data Governance & AI Model Risk Management emphasizing AI-first approaches.
- Designed ML-driven conversational bots for retail banking platforms.

Senior VP / CTO / Product Global Delivery Head – Digital Face. Digital Banking Platform • Oct 2015 – Oct 2016 Intellect Design Arena Ltd. (A Polaris Group Company)

Senior VP and Global Head – Enterprise Risk and Compliance • Sep 2014 – Oct 2015

Polaris Financial Technology Ltd.



COLLEGE OF ENGINEERING

CeRAI









POLARIS





#### **Key Clients:**



- Led Digital Banking Product Engineering, Delivery, Pre-sales, Implementation, and Post-Live Production Support for global client
- Attained 120% YoY revenue growth by leading Digital Omni Channels, Product Engineering Initiatives, and Agile-based mobile/direct banking/channel app development.
- Conceptualized products, GTM strategies, and launch roadmaps, leading to successful global implementations.
- Developed and executed best practices and data strategy for the company & led the Data Stewardship in Digital Banking product.



# VP, Global Head – Product Related Services Group | Core Banking & FlexCube Suite Surround Services, Technology

- Advisory and GRC Consulting Nov 2008 Sep 2014 Oracle Financial Services Software Ltd. (Acquired I-flex Solutions) USA, Japan, Europe, India
- Managed global delivery of large Managed delivery of large, multi-million-dollar Core Banking Transformation & Integration programs across OFSS productlines. with responsibility for P&L, stakeholder management, and scope management.
- Directed Pre-sales, Bespoke Application Development Management, Reporting Product Implementation, Post-Live Production Support,
- Consulting, Business Development, and CRM across enterprise-wide middleware business with P&L responsibility. • Led Data Strategy for factory-grade data migration initiatives from legacy systems and data pipelining for Core
- Banking engines.
  Established integrated Data and Advanced Analytics strategies for Core Banking transformation programs for Elexcube customers
- Driven Integration Centric Projects (SOA, BPM, AIA) around Flexcube, OFSAA, Financial Services Data Warehousing (FSDW), Siebel & Oracle CRM, Financial Accounting Hub, EBS, EPM Apps, Technology Deployment, and Management Services across global clients.

Implemented integration strategies for OFSS Core Banking Platform (FC-UBS) and Oracle FSDW into bank ecosystems using Oracle Application Integration Architecture (AIA), and deployed OFSS Direct Banking Solution (FC-DB) across multiple customers.

Global Practice Head • Nov 2008 – Sep 2014 Technology Advisory and GRC Consulting

- Spearheaded the Technology Advisory & Enterprise Governance, Risk & Compliance practice globally around regulatory frameworks such as CoBIT, SOX 404, RCSA, CMMI, ISO, etc, acquiring the 1st & 100th customer for Consulting practice.
- Managing Principal Head Led the Global Sales & Marketing Feb 2006 Nov 2008, i-Flex Consulting, Global Sales & Marketing
- Pre-sales process for OFSS Consulting Tier 1 customers Sep 1996 Feb 2000, Citigroup
- Practice Head IT Process Transformation, Governance, Risk and Compliance Feb 2000 Feb 2006 Lead, Software Engineering Group, Corporate Banking Group
- Senior Software Engineer Feb 1993 Sep 1996, Expert Software Consultants Limited New Delhi
- Member Combat Arm of Indian Air Force Sep 1987 1993

# CERTIFICATION

- Research, Writing, and Policy Analysis in AI Policy from Center for AI and Digital Policy, Washinton, US
- Certificate on Foundations of Independent Audit of AI Systems, For Humanity, USA
- Machine Learning & DL with Business Applications Data Center & Analytics Lab | Indian Institute of Management, Bangalore
- SEI Authorized SCAMPI® and CMM Lead Appraiser | 'Intro to CMMI' Instructor, Carnegie Mellon, USA
- Managing Business in a Global Context | ESADE Business School, Barcelona, Spain





