

SOLOMON TESSEMA - AI Developer

- **Location:** Frisco, TX
- **Phone:** +1 214 429 9312
- **Email:** solomon.tessema@outlook.com
- **LinkedIn:** <https://linkedin.com/in/solomon-tessema>
- **Website:** <https://solomontessema.com>
- **GitHub:** <https://github.com/solomontessema>
- **Blog:** <https://ai.solomontessema.com>

Experienced AI Developer with deep expertise in architecting modular, tool-using agents within the Python ecosystem, leveraging LangChain, LangGraph, LlamaIndex, Hugging Face Transformers, and custom orchestration frameworks for autonomous reasoning and generative workflows. Skilled in Azure OpenAI Service, Microsoft Foundry, Azure Functions, Azure App Services, and Azure Kubernetes Service (AKS) to design and deploy scalable AI solutions in production environments. Specialize in building autonomous systems that reason, act, and adapt across domains including retail orchestration, secure email workflows, and enterprise-scale data pipelines. Proficient in multi-agent orchestration, prompt engineering, vector store integration with Pinecone, and retrieval-augmented generation (RAG). Experienced in distributed ETL and analytics with PySpark, as well as classical and modern machine learning techniques (CNNs, RNNs, NLP). Adept at translating complex agentic architectures into recruiter-ready, real-world solutions with clarity, modularity, and impact—emphasizing evaluation, logging, and cloud-native integration on Azure.

Experience

IONNOVA LLC: Agentic AI and Generative AI Developer/ Architect

January 2025 – Present | Frisco, TX

At IONNOVA LLC, I lead the architecture and deployment of enterprise-grade agentic AI systems, focusing on modular design, scalable orchestration, and Azure-native generative AI solutions. My work enables organizations to operate LLMs through robust pipelines, multi-agent reasoning frameworks, and secure integrations that support real-world business workflows.

Key Contributions

- **Agentic AI System Architecture:** Designed and deployed advanced agentic AI systems using Azure OpenAI Service and Microsoft Foundry, enabling autonomous reasoning, workflow automation, and enterprise-grade reliability.
- **Modular Multi-Agent Design:** Built reusable, composable AI agents using LangChain, LangGraph, and custom Python tooling to support complex decision-making, tool use, and multi-step task execution.

- **Scalable LLM Pipeline Engineering:** Developed end-to-end AI pipelines integrating GPT, Gemini, external APIs, and vector databases (Pinecone, Chroma) to deliver high-performance semantic search and retrieval.
- **RAG & Prompt Engineering Optimization:** Led strategies for prompt design, retrieval-augmented generation, evaluation, and safety alignment to improve accuracy, relevance, and trustworthiness of AI outputs.
- **Technical Education & Enablement:** Delivered personalized training and onboarding programs covering LLMs, Agentic AI, and RAG workflows for audiences ranging from beginners to senior executives exploring AI adoption.

Metrocare Services: Lead Software & AI Developer

September 2021 – December 2024 | Dallas, TX

At Metrocare Services, I led the development of AI-driven solutions that enhanced mental health service delivery through automation, decision support, and improved patient engagement. My work focused on applying LLMs and agentic AI to clinical workflows while ensuring compliance, transparency, and responsible AI practices.

Key Contributions

- **LLM Application Development:** Directed the design and deployment of generative AI applications to support clinicians, streamline documentation, and improve patient-facing interactions.
- **Autonomous Agentic Workflow Automation:** Engineered agentic AI systems using LangChain and custom tool integrations to automate clinical tasks, triage processes, and operational decision-making.
- **RAG Pipelines for Clinical Insights:** Built retrieval-augmented generation workflows to enhance accuracy, contextual grounding, and reliability of AI-generated recommendations in healthcare settings.
- **Secure Cloud & API Integration:** Integrated LLMs with secure APIs and cloud infrastructure to ensure scalable, compliant, and high-availability AI services across the organization.
- **Cross-Functional Collaboration:** Partnered with clinicians, data teams, and leadership to translate emerging AI research into practical, ethical, and measurable improvements in mental health service delivery.

Caliber Home Loans: Senior Software Developer

March 2021 – September 2021 | Coppel, TX

At Caliber Home Loans, I developed data-driven and AI-enhanced solutions to improve borrower experience, strengthen portfolio analytics, and support risk assessment. My work combined NLP, predictive modeling, and dashboard development to deliver actionable insights for mortgage operations.

Key Contributions

- **NLP for Customer Insights:** Built natural language processing solutions to analyze borrower feedback and call center notes, uncovering sentiment trends and service quality indicators.
- **Mortgage KPI Analytics:** Defined and monitored mortgage specific KPIs, developing dashboards that tracked loan performance, default patterns, and refinancing activity for portfolio management.
- **Predictive Modeling for Risk Assessment:** Developed and validated predictive models using Scikit-learn and TensorFlow to enhance risk scoring, streamline underwriting, and support operational decision-making.
- **Cross-Team Model Integration:** Collaborated with engineering and product teams to integrate models into production systems, improving workflow efficiency and borrower experience.

Lennox International: Software Developer

June 2019 – August 2020 | Richardson, TX

At Lennox International, I contributed to the modernization of engineer-to-order (ETO) workflows by developing full-stack applications and rule-based automation systems that supported HVAC and commercial refrigeration product configuration. My work improved quoting speed, reduced manual engineering effort, and enhanced the accuracy of downstream manufacturing processes.

Key Contributions

- **Full-Stack .NET Application Development:** Engineered and deployed a full-stack .NET application integrating Rulestream and SQL Server to automate ETO workflows, enabling dynamic configuration of HVAC and refrigeration systems.
- **Rule-Based Logic & Configuration Automation:** Authored complex rule logic in VB.NET to dynamically generate product specifications based on customer requirements, engineering constraints, and manufacturing parameters.
- **Database Engineering for Configuration Pipelines:** Designed and optimized T-SQL stored procedures and relational data models supporting configuration workflows, bill-of-materials (BOM) generation, and downstream manufacturing processes.
- **Modular Software Component Design:** Developed reusable components for product configuration, business rule processing, and workflow automation, improving maintainability and reducing development overhead.
- **Enterprise System Integration:** Integrated .NET logic with enterprise systems to streamline transformation rules, ensuring consistency across configuration pipelines and reducing manual intervention.
- **Cross-Functional Collaboration:** Worked closely with engineering, manufacturing, and product teams to refine requirements, improve scalability, and enhance traceability for multi-spec commercial products.

Digital Matrix Systems: Data Engineer

January 2018 – December 2018 | Addison, TX

At Digital Matrix Systems, I supported financial institutions by building predictive models, designing enterprise data systems, and engineering ETL pipelines that transformed raw financial data into actionable insights for credit risk assessment and regulatory reporting.

Key Contributions

- **Machine Learning for Credit Risk:** Applied Scikit-learn, Pandas, and NumPy to develop predictive models for credit risk assessment using borrower behavior and historical loan performance data.
- **Feature Engineering & Model Evaluation:** Conducted feature engineering, model tuning, and evaluation to improve classification accuracy and interpretability for risk stratification workflows.
- **Enterprise Data Warehouse Development:** Designed and deployed SQL Server databases and data warehouses to support analytics, reporting, and compliance needs for banks and credit unions.
- **ETL Pipeline Engineering:** Built and maintained ETL workflows to transform raw and XML-based financial data into structured relational formats for operational and analytical use.
- **CLR-Based Financial Computation:** Engineered CLR functions and procedures in C# to perform complex financial calculations directly within SQL Server, improving performance and modularity.
- **Integrated .NET Logic in Data Pipelines:** Embedded .NET-based business rules into transformation flows, enhancing maintainability and reducing manual processing.
- **Cross-Team Collaboration:** Partnered with analysts, engineers, and client teams to ensure data accuracy, schema evolution, and seamless integration across internal and external systems.

GXT LTD (Now LJA Express): Software Developer

May 2014 – December 2017 | Richardson, TX

At GXT LTD, I developed geospatial automation tools and data processing systems that supported telecom engineering workflows for underground utility analysis and fiber network planning. My work improved accuracy, reduced manual drafting time, and enabled scalable geospatial analysis.

Key Contributions

Geospatial Automation with Python & ArcGIS: Built custom Python tools using ArcGIS APIs to process field notes and geospatial datasets, streamlining telecom engineering workflows for underground utility mapping.

- **GIS-Driven Network Planning:** Developed geospatial models combining GIS layers, field documentation, and utility datasets to support strategic fiber optic network planning and routing.
 - **Database Engineering for Geospatial Workflows:** Designed and maintained SQL Server databases to centralize project data, improving accessibility, consistency, and operational efficiency across engineering teams.
 - **Geospatial Data Integration:** Utilized shapefiles, utility maps, satellite imagery, and field data to deliver accurate, data-driven recommendations for network deployment.
 - **AutoCAD Plugin Development:** Created a custom AutoCAD plugin using C# and the AutoCAD .NET API (ObjectARX) to automate utility layout and schematic generation, significantly reducing drafting time and improving precision.
 - **Lightweight Automation with AutoLISP:** Leveraged AutoLISP scripting to build lightweight automation tools and custom commands for engineering teams.
-

Education

- Indiana State University — MS: Mathematics, August 2022
 - Southern New Hampshire University — BA: Mathematics, August 2020
 - Dallas College — AS: Software Engineering, December 2017
-

Volunteer Teaching Experience

Microsoft Philanthropies TEALS Volunteer Program

Summer 2020

As a TEALS volunteer, I supported computer science education in underserved high schools by partnering directly with classroom teachers to strengthen curriculum delivery, student engagement, and long-term program sustainability. My work helped expand access to foundational computing skills for students who otherwise had limited exposure to technical education.

Key Contributions

- **Classroom Co-Teaching & Instructional Support:** Partnered with high school teachers to deliver introductory computer science lessons, reinforcing core programming concepts and guiding students through hands-on coding exercises.
- **Curriculum Development & Student Coaching:** Contributed to curriculum planning, assignment design, and instructional materials that helped students build computational thinking skills and confidence in problem-solving.

- **Program Sustainability & Teacher Enablement:** Collaborated with educators to establish repeatable teaching practices, ensuring the school could continue offering computer science courses independently after the TEALS program cycle.
 - **Equity-Focused Impact:** Supported efforts to expand access to high-quality CS education in underserved communities, helping create pathways for students to pursue STEM learning and future technical careers.
-

Skill Summary

- **Cloud & AI Platforms:** Azure OpenAI Service, Microsoft Foundry, Azure Functions, Azure App Services, Azure Kubernetes Service (AKS), Azure Cognitive Services
- **Agentic AI and LLM Integration:** LangChain, LangGraph, LlamaIndex, RAG, multi-agent orchestration, OpenAI, Gemini, Hugging Face Transformers
- **Machine Learning & AI Libraries:** NumPy, Pandas, Matplotlib, Seaborn, Scikit-Learn, TensorFlow
- **Mathematics & Statistics:** Probability, Linear Algebra, Differential Equations, Mathematical Modeling, Advanced Statistics
- **Programming Languages:** Python, C#, SQL, JavaScript, HTML, CSS, MATLAB
- **Data Analytics & AI:** Machine Learning, Deep Learning, Predictive Modeling, Convolutional Neural Networks (CNN), Recurrent Neural Networks (RNN), Natural Language Processing (NLP), Large Language Models (LLM), Generative AI, Agentic AI, GPT, Statistical Analysis, Feature Engineering, Alteryx, RapidMiner, SAS, Excel
- **Database & Data Management:** SQL Server, MySQL, BigQuery, Data Warehousing, ETL Processes
- **Tools & Environments:** Azure, Jupyter Notebook, JupyterLab, Git, GitHub, TFS, Confluence, Jira, LaTeX