

# SOLOMON TESSEMA - AI Developer

- **Location:** Frisco, TX
- **Phone:** +1 214 429 9312
- **Email:** [solomon.tessema@outlook.com](mailto: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. Specialize in designing autonomous systems that reason, act, and adapt across domains including retail orchestration, secure email workflows, and scalable data pipelines. I am skilled in multi-agent orchestration, prompt engineering, vector store integration with Pinecone, and RAG. Leverage PySpark for distributed ETL, data transformation, and high-performance analytics. Proficient in classical and modern machine learning techniques including predictive modeling, CNNs, RNNs, and NLP. Experienced with Scikit-learn, TensorFlow, and statistical analysis for building robust, interpretable models. Translate complex agentic architectures into real-world solutions with clarity, modularity, and impact, emphasizing evaluation, logging, and multi-platform integration.

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## Experience

### IONNOVA LLC: Agentic AI and Generative AI Developer/ Architect

*January 2025 – Present | Frisco, TX*

- Develop and deploy advanced agentic AI systems and generative AI models to create autonomous, context-aware applications across diverse domains and industries.
- Design and implement modular AI agents leveraging LangChain, LangGraph, and custom Python tooling to enable complex reasoning, decision-making, and multi-step workflows.
- Build scalable AI pipelines integrating LLMs such as OpenAI GPT and Gemini with external APIs, vector databases (Pinecone and Chroma) for semantic search, and secure data sources.
- Lead prompt engineering and RAG strategies to optimize AI output relevance, accuracy, and safety.
- Deliver personalized one-on-one courses and technical onboarding in LLMs, agentic AI, and RAG workflows, serving a diverse audience from curious newcomers and technical teams to senior managers and executives exploring AI adoption.

## **Metrocare Services: Lead Software & AI Developer**

*September 2021 – December 2024 | Dallas, TX*

- Led the development and deployment of large language model (LLM) applications and generative AI solutions to enhance mental health service delivery and patient engagement.
- Designed and implemented autonomous agentic AI systems leveraging LangChain and custom tool integrations to automate clinical workflows and decision support.
- Developed prompt engineering strategies and retrieval-augmented generation (RAG) pipelines to improve accuracy and relevance of AI-driven insights in healthcare contexts.
- Integrated LLMs and generative AI models with secure APIs and cloud infrastructure to ensure scalable, compliant, and efficient AI services.
- Collaborated with cross-functional teams to translate complex AI research into practical, impactful healthcare applications, emphasizing transparency, evaluation, and ethical AI use.

## **Caliber Home Loans: Senior Software Developer**

*March 2021 – September 2021 | Coppel, TX*

- Developed NLP solutions to analyze customer feedback and call center notes, revealing key insights into borrower sentiment and service quality.
- Defined and tracked mortgage-specific KPIs and built dashboards to monitor loan performance, default trends, and refinancing activity for portfolio management.
- Spearheaded predictive model development using Scikit-learn and TensorFlow, enhancing mortgage risk assessment and streamlining loan processing.
- Collaborated with engineering and product teams for seamless model integration, improving operational efficiency and customer experience.

## **Lennox International: Software Developer**

*June 2019 – August 2020 | Richardson, TX*

- Engineered and deployed a full-stack .NET application integrating Rulestream and SQL Server to automate engineer-to-order (ETO) workflows for HVAC and commercial refrigeration systems.
- Designed and authored complex rule-based logic using VB.NET, enabling dynamic configuration of product specifications based on customer requirements, constraints, and manufacturing parameters.
- Built and optimized T-SQL stored procedures to manage relational data models supporting configuration workflows and downstream BOM generation.
- Developed modular software components to support product configuration, business rule processing, and workflow automation, improving quoting speed and reducing manual intervention.

- Integrated .NET logic with enterprise systems to streamline transformation rules and enhance maintainability across configuration pipelines.
- Collaborated with cross-functional engineering and manufacturing teams to improve scalability, traceability, and operational efficiency for multi-spec commercial products.

## **Digital Matrix Systems: Data Engineer**

*January 2018 – December 2018 | Addison, TX*

- Applied machine learning techniques using Scikit-learn, Pandas, and NumPy to build predictive models for credit risk assessment, leveraging historical loan performance and borrower behavior data.
- Conducted feature engineering and model evaluation to optimize classification accuracy and interpretability, supporting risk stratification and decision-making for financial institutions.
- Designed and deployed SQL Server databases and enterprise data warehouses to support analytics and reporting needs for banks and credit unions.
- Built and maintained ETL workflows to transform raw and XML-based financial data into structured relational formats for operational and analytical use.
- Delivered targeted data visualizations and reporting solutions to enable risk analysis, compliance tracking, and executive decision support across financial datasets.
- Engineered CLR-based functions and procedures using C# for complex financial calculations directly within SQL Server, enhancing performance and modularity.
- Integrated .NET logic into transformation flows to streamline business rules and improve maintainability of data processing pipelines.
- Collaborated with cross-functional teams to ensure data accuracy, schema evolution, and seamless integration across internal systems and client platforms.

## **GXT LTD (Now LJA Express): Software Developer**

*May 2014 – December 2017 | Richardson, TX*

- Created custom software tools using Python and ArcGIS APIs to process field notes and geospatial datasets, streamlining telecom engineering workflows for underground utility analysis.
- Developed geospatial models to support strategic fiber optic network planning by combining GIS layers with field engineering documentation for precise, scalable designs.
- Built and maintained SQL Server databases to centralize project data, improving data accessibility and driving operational efficiency across engineering teams.
- Utilized diverse geospatial data sources (including shapefiles, utility maps, and satellite imagery) to deliver data-informed recommendations for network deployment and routing.
- Developed a custom AutoCAD plugin using C# and the AutoCAD .NET API (ObjectARX) to create specialized commands for utility layout and schematic generation, significantly improving drafting precision and reducing manual workflows. Also leveraged AutoLISP scripting for lightweight automation and tool customization.

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## Education

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

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## Volunteer Teaching Experience

### Microsoft Philanthropies TEALS Volunteer Program

*Summer 2020*

- Partnered with high school teachers to deliver computer science education to underserved communities through the Technology Education and Learning Support (TEALS) program.
- Contributed to classroom instruction and curriculum support, helping students build foundational programming skills and computational thinking.
- Collaborated with educators to establish sustainable computer science programs, fostering long-term impact and equitable access to technical education.

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## Skill Summary

- **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