

# ROSS JOHN

AI & Machine Learning Engineer

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## Experience

State Auditor Office, MA

Boston, MA

Senior Emergent Technology Developer

10/2025 - 06/2026

- Designed and built scalable data ingestion pipelines using structured output models to parse complex, unstructured document sets, converting document sets into clean, normalized formats.
- Engineered a metadata-driven taxonomy using NLP to enhance data discoverability and accuracy across agency databases.
- Architected and deployed enterprise-grade Retrieval-Augmented Generation (RAG) and Agentic RAG workflows utilizing Azure OpenAI to accelerate audit production.
- Implemented and optimized Azure AI Search index architectures, leveraging vector and hybrid search capabilities to drastically reduce retrieval latency and improve the precision of context injection in RAG pipelines.

iVisa

Remote

AI & Machine Learning Engineer, iVisa

03/2024 - 05/2025

- Led the design, development, and deployment of advanced AI-driven applications leveraging LLMs and computer vision
- Created visa and passport photo checkers, reducing missing information issues, expediting processing times, and increasing automation
- Designed an image post-processing pipeline ensuring regulatory compliance and enhancing customer-submitted photos
- Improved chatbot accuracy from 62% to 98% by transitioning from vector databases to API integrations using structured outputs
- Integrated tools for enhanced customer interactions, reducing response times and improving user satisfaction
- Developed custom deep-learning models, providing a competitive edge across multiple applications
- Optimized ML pipelines for faster inference and efficient compute usage on cloud infrastructure with hardware acceleration

Elutions

Delafield, WI

Data Scientist, Elutions

09/2022 - 05/2023

- Increased output production by \$30M annually using Generalized Linear Modeling with Markov Chain Monte Carlo sampling to identify change over time by product categories for clients
- Developed Reinforcement-Learning Generative AI to automate and optimize a desalination plant leading to a 5% Fuel Reduction while Maintaining Output
- Applied Desalination Plant Generative AI to Crude Oil Refinery Process to use 8% Less Fuel for Refining Oils

## Education

 Eastern University 10/2023 - 08/2024

Master of Science in Data Science | GPA: 3.9 / 4.0

 University of Pittsburgh 09/2016 - 12/2020

Bachelor of Science in Mathematics & Economics

## Certifications

AWS Certified Machine Learning Specialty — [Amazon Web Services](#), (06/03/2025 - 06/03/2028)

Microsoft Certified Azure Data Scientist Associate — [Microsoft](#), (05/25/2022 - 05/25/2023)

## Skills

Software Development:

GitHub, GitLab, Object-Oriented Programming, Python, JavaScript, Java, R, Apache Airflow, CI/CD, FastAPI, Django, Flask, Data Pipelines

Distributed Computing: Azure, AWS, Kubernetes, Docker, Apache Spark, Hadoop, Linux, SQL

Data Science:

NumPy, Pandas, Scikit-Learn, SciPy, GPyOpt, Hyperopt, Optuna, Machine Learning, Matplotlib, Seaborn, Plotly, Tableau, HuggingFace, Transformers, Signal Processing

Deep Learning:

TensorFlow, PyTorch, Keras, Neural Networks, JAX, Bayesian Neural Networks, Convolutional Neural Networks, End-to-end Deep Learning, Synthetic Dataset Generation, Reinforcement Learning, Self-Supervised Learning, OpenCV

Natural Language Processing (NLP):

Large Language Models (LLM), LangChain, LangGraph, OpenAI API, Chatbots, Multi-Agent Systems, Prompt Engineering