Averine Sanduku

Active: Secret Security Clearance
Portfolio: https://www.sandukuworks.ai/ | GitHub: https://github.com/averine1

EDUCATION

Tuskegee University
B.S. Mechanical Engineering
GPA: 3.5 | December 2022

University of California, Berkeley
Master of Information and Data Science
GPA: 3.6 | May 2025

EXPERIENCE

Data Engineering Lead/Division Officer – US NAVY **Dec 20222 – July 2025**

- Led a 50-person cross-functional division while designing and deploying Generative AI-powered predictive readiness models analyzing structured and unstructured data for 1,000+ personnel, improving decision response time by 52%.
- Built and automated ETL pipelines in Python (Pandas, NumPy, scikit-learn) within a Linux environment, integrating anomaly detection and root-cause modeling to enhance system reliability and reduce delays.
- Implemented MLOps-aligned dashboards and data workflows for real-time monitoring, ensuring model reproducibility, operational excellence, and sustained 99%+ system uptime.

Structural Engineer Intern – Boeing Co. **Summer 2022**

- Analyzed 200+ aircraft data points using Python for trend detection and root cause prediction on 787 structural systems.
- Created a predictive maintenance model prototype to forecast component fatigue, reducing inspection time by 30%.
- Automated FAA compliance calculations using Python and Excel VBA, cutting manual processing time by 20%.

Material Science Researcher – NUCOR Steel Co. **August 2020 – May 2021**

- Utilized regression modeling and statistical analysis to improve process consistency by 18%.
- Conducted data-driven failure analysis using Vickers testing to optimize material reliability.
- Delivered reports integrating quantitative and qualitative research for process improvement.

Mechanical Design Engineer Intern – Boeing Co. **Summer 2021**

- Created CAD models and 3D-printed prototypes for RF enclosures, improving thermal performance and reducing EMI issues.
- Conducted mechanical testing on RF systems, identifying weak points that informed redesigns.
- Reduced design iteration cycle by 25% through rapid prototyping and early-stage thermal validation.

Mechanical Design Engineer Intern – Boeing Co. **Summer and Fall 2020**

- Led antenna switch from prototype through production: designed, tested, and deployed to manufacturing, improving signal quality by 15% across product line
- Executed emissions and thermal testing to verify design compliance and operational reliability.
- Collaborated cross-functionally with hardware and systems engineering teams to accelerate production timelines.

PROJECTS

VitalStory – RAG-Powered AI Health Communication Platform

- Built a Retrieval-Augmented Generation (RAG) pipeline using LangChain, Hugging Face Transformers, and vector databases (Qdrant) to support patient–provider interaction.
- Implemented agentic workflows with contextual memory and relevance scoring for response generation.
- Deployed prototype with FastAPI, Docker, and AWS Lambda ensuring scalable, compliant performance.

gpu-poor – Production-Grade Model Quantization Library

- Developed production-grade INT8 quantization system achieving 74% memory reduction across GPT-2 language models (3GB→767MB) with zero quality loss, enabling large-scale neural network deployment on memory-constrained hardware using PyTorch and Transformers frameworks
- Conducted systematic performance profiling and benchmarking revealing inverse scaling between quantization overhead and model size (1.0× speed on large models, 0.4× on small models), demonstrating data-driven optimization and production engineering judgment
- Designed cross-platform pure-Python implementation for deployment reliability; published open source (MIT) with comprehensive documentation

TECHNICAL SKILLS

Languages: Python, SQL, MATLAB, R, C++

Frameworks: TensorFlow, PyTorch, LangChain, Hugging Face, scikit-learn, XGBoost

Data Engineering: ETL, Pandas, Feature Engineering, API Integration, AWS

Visualization: Tableau, Power BI, Streamlit