

VINCENT TETTEY

AI / MACHINE LEARNING ENGINEER

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PROFESSIONAL SUMMARY

Performance-driven **AI/ML Engineer** with a proven track record in designing full-stack intelligent systems, NLP pipelines, microservice architectures, and predictive models. Highly skilled in high-performance backend development with **Rust** and **Python (FastAPI)**, frontend state management using **Redux** and **React**, and containerized deployment. Strong analytical background in statistical modeling, quantitative analysis, and machine learning, dedicated to engineering scalable, production-grade AI solutions and transforming high-dimensional data into strategic insights.

TECHNICAL SKILLS

Languages:	Rust , Python (Advanced), SQL (BigQuery, PostgreSQL), R, Bash, JavaScript/TypeScript, Matlab
AI & Machine Learning:	PyTorch, TensorFlow, Scikit-Learn, XGBoost, Transformers, LLM Tool Calling, NLP, Computer Vision
Full-Stack & Systems:	FastAPI, React.js, Redux / Redux Toolkit , Streamlit, RESTful APIs, Asynchronous Microservices
MLOps & DevOps:	Docker, Git/GitHub, CI/CD Pipelines, SQLite3, BigQuery, Model Monitoring & Logging
Mathematics & Analytics:	Quantitative Modeling, Probability Theory, Vector Calculus, Linear Algebra, Statistical Inference, ETL Pipelines

FEATURED PROJECTS

AI-Powered Quality Management System (QMS) Copilot | [GitHub](#) | [Demo Video](#) | [Architecture Walkthrough](#) July 2026

- Architected an enterprise-grade, full-stack AI complaint assistant using **FastAPI**, **React**, and **Redux Toolkit** to automate customer grievance classification, root-cause analysis, and resolution workflows.
- Engineered asynchronous backend microservices integrated with LLM tool-calling engines to dynamically parse unstructured customer feedback and trigger automated QMS compliance actions.
- Implemented global client-side state management with **Redux** to optimize UI rendering and support real-time streaming responses, reducing frontend latency during complex AI generation cycles.
- Structured modular repository design with Docker containment and robust exception handling for seamless enterprise deployment.

Production-Ready Book Recommendation Engine | [GitHub](#) | [Live Web App](#) March 2026

- Architected a content-based filtering recommendation engine using NLP TF-IDF vectorization across 270,000+ item records.
- Optimized query latency and metadata retrieval by building a structured SQLite3 backend, seamlessly integrated with a cloud-hosted Streamlit interactive user interface.

Senior Citizen Age Prediction Pipeline | [IIT Guwahati Summer Analytics 2026](#) | [GitHub Repository](#) May 2026

- Engineered a 9-phase binary classification pipeline on CDC NHANES health datasets to classify senior vs. adult demographic risk groups.
- Created 10 clinical interaction features, expanding feature space from 7 to 20 predictors, and handled severe class imbalance via SMOTE with tuned Random Forest/XGBoost models, achieving an **ROC-AUC of 0.957** and an **F1-score of 0.891**.

PySimverse Drone Navigation & Sim2Real Logic February 2026

- Engineered autonomous flight navigation logic in PySimverse across 5 missions, deploying real-time vision-based body tracking and gesture control algorithms optimized for low-latency inference.

PROFESSIONAL EXPERIENCE

Mathematics and Computing Instructor | *Great Lamens JHS, Ghana* January 2024 – Present

- Architected a logic-based computing and STEM curriculum for 50+ students, introducing fundamental algorithmic thinking, structured problem-solving, and software design principles.
- Spearheaded technical mentorship initiatives in algebra, ICT, and logic modeling, resulting in a 30% increase in student project completion rates.

EDUCATION & HONORS

BSc. Actuarial Science | *Kwame Nkrumah University of Science and Technology (KNUST)* Level 200 Student

- Academic Honors:** Academic Excellence Award (Ranked Top 5 Student in Academic Cohort).

WASSCE (Business Major) | *Oda Senior High School* March 2021 – September 2023

CERTIFICATIONS & LEADERSHIP

Certifications: AWS for Data Science (Simplilearn, 2026) | Intro to BigQuery/SQL (Kaggle, 2026) | Predictive Modelling (IBM, 2026) | Python for Data Science (3IXL, 2025)

Leadership: Youth President — SDSCC/Akwatia Branch (Oct 2025 – Present) | Lead youth executive team in executing strategic community programs.