Kolade Alabi

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Summary

ML Engineer & Graduate Researcher at University of Maryland, College Park with 2+ years experience shipping production-grade ML features and resilient backend systems. Currently focused on developing theoretical frameworks for robust optimization in ML systems.

Education

University of Maryland, College Park — *College Park, MD*

Master of Science in Computer Science — *Expected May 2027*

- **Key Coursework**: Uncertainty Communication for Decision-Making, Theory of Robust Machine Learning, Systems for Machine Learning, Interactive Technologies in Human-Computer Interaction, Advanced Computer Graphics

Skills

Machine Learning & Data TensorFlow, Keras, PyTorch, ONNX, Scikit-learn, SciPy, Pandas, Polars, NumPy, Matplotlib, LangChain, LangGraph, SQLite, MySQL, PostgreSQL, PgVector, MongoDB, OpenSearch/ElasticSearch

Languages & Web: Python, Flask, Django, FastAPI, Streamlit, C/C++, C#, .NET, JavaScript/TypeScript, React, Webpack, R, Java, Spring Boot, Apache Maven, SQL, HTML/CSS

CI/CD: Git, Terraform, AWS, Docker, Apache Jmeter, GitHub Actions, Jenkins, SonarQube, Spinnaker

Experience

University of Maryland, College Park — *College Park, MD*

Graduate Research Assistant — *January 2026 - Present*

- Developing theoretical Machine Learning metric frameworks for outperforming Empirical Risk Minimization (ERM) in multi-class settings
- Investigating robust optimization techniques for minimizing sample complexity and training in practial settings

Teaching Assistant — *September 2025 - December 2025*

- Facilitated communication between professor and students, and assisted with management of Unity-based Game Programming course, leading grading organization and course announcement activities
- Tutored students individually to improve understanding of course topics, including Unity Development, C# programming, and game physics

JPMorgan Chase — *Houston, TX*

Software Engineer — *August 2023 - August 2025*

- Spearheaded the design and development of an Agentic LLM Assistant for presentation creation, fit with Q&A support capabilities as well as integrations with newly created VectorDB internal knowledge base for Retrieval Augmented Generation (RAG), content library APIs, and internal financial applications
- Developed the core platform for the AI Assistant, a .NET PowerPoint add-in that streamlined business presentation creation and unrestricted content retrieval for over 80,000 users
- Modernized core APIs to AWS hosting, including the refactoring of Apache Solr-powered search to AWS OpenSearch full-text querying — increasing scalability and allowing for retirement of global physical servers
- Execution Excellence Award Q1 2024: One of 5 recipients out of ∼200 JPMC SEP engineers for contributions to the modernization of key application modules and sharing of expertise on AWS ECS and OpenSearch

Carnegie Mellon University — *Remote*

Research Intern (Part Time) — *July 2023 - December 2024*

- Designed k-d tree-based false positive particle filtering system, reducing noise in particle data by more than 40% to improve downstrain clustering performance
- Created Singularity container to run the Deep Iterative Subtomogram Clustering Approach (DISCA) deep learning pipeline end-to-end and furthermore trained CMU collaborators from multiple universities on the usage of said container, reducing setup time by nearly 80%

Activities

Google

Computer Science Research Mentorship Program — *February 2023 - May 2023*

- Invited to present research findings on novel applications of Transfer Learning architectures to predict the progression of Alzheimer's in patients by way of blood samples to CSRMP participants
- Collaborated with Google DeepMind NLP researcher to explore best practices in academic Machine Learning research, directly informing the development of Undergraduate thesis on image style transfer learning

Projects

By Its Cover | PyTorch, OpenAI CLIP, FastAPI, Python, PgVector, GraphQL, Microsoft SemanticKernel, .NET 9, AWS RDS

- Developing a Collaborative Filtering model, based on CLIP embeddings, for recommending book covers to users based on the covers of books along with the cover ratings from similar users
- Implemented a GoodReads cover scraper, along with integrations with HardCover API for Isbn details, to populate a PgVector database of book cover CLIP embeddings, enabling semantic search by text or other covers
- Deploying cover vector database to AWS RDS, while with hosting CLIP model and .NET cover rating API on AWS ECS