Toluwanimi Ariyo

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Education

Princeton University Princeton, NJ
B.S. in Computer Science; Minor in Statistics & Machine Learning *Expected May 2026*

- **Relevant Coursework:** Algorithms and Data Structures, Operating Systems, Machine Learning Algorithms, Computer Architecture, Advanced Programming Techniques, Distributed Systems, Human-Computer Interaction
- **Teaching Assistant Experience:** Applied Linear Algebra, Applied Physics, Applied Calculus
- **Awards & Honors:** Induction into Princeton Engineering Council (**~8** students selected) **-** 2022/2023

Experience

Datadog - AI Cloud Platform New York, NY
Software Engineer Intern *May 2025 - Aug 2025*

- Developed an AI/LLMs powered system for mapping more than **95%** cloud resource types in the Resource Catalog to the corresponding resource types defined in Terraform, providing a high level view of the cloud infrastructure (**Python, Go**).
- Enhanced Terraform support features by implementing AI-based detection for resource blocks within ingestion and extending the indexer to handle diverse file formats, enabling comprehensive resource evaluation (**Go, Terraform**).
- Integrated Claude Code CLI into IaC analysis workflows, fine-tuning prompts to identify absolute path patterns and standardize local module parsing (**Python, Claude CLI**).

IBM - AI & Quantum Computing Research Yorktown Heights, NY
Quantum Research Intern *Sep 2024 - Nov 2024*

- Designed a protocol to perform calibrations remotely on qubits via IBM's **Qiskit** platform.
- Created a tutorial for this protocol and presented findings to the broader IBM Quantum research team. Implemented Mirror Randomized Benchmarking (**MRB**) in the Qiskit Experiments library for scalable measurement of average gate fidelities.

Microsoft - Copilot AI Business Platform Redmond, WA
Software Engineer Intern *May 2024 - Aug 2024*

- Configured a Copilot AI enabled and LLMs data trained deflection bot to handle more than **80%** of customer queries, enabling the customers to self-serve their requests faster and efficiently (**Python**).
- Created Figma mock-ups of app screens and made sample Power Apps that highlight native capabilities such as barcode/NFC reading, mixed reality, etc. (**React.js, JavaScript, HTML/CSS**).

Amazon - Supply Chain Optimization Technologies Bellevue, WA
Software Development Engineer Intern *May 2023 - Aug 2023*

- Extracted weblab info from PPDC (Promise Policy Dynamic Configuration) containing crucial Promise configurations for constraints, contribution profit, cost band, ship-option eligibility, overrides etc into AWS APP Config (**Java, Kotlin**).
- Constructed systems to deliver products to **250,000,000+** customers with approximately **9%** lower latency rate (**Java**).
- Configured large scale distributed systems systems using AWS technologies and augmented complex real time systems leveraging data from **1,000,000,000+** of orders to pioneer new scalable solutions (**Kotlin, Java**).

National Institutes of Health - National Institute of Diabetes and Digestive and Kidney Diseases Bethesda, MD
Software Engineer Intern *June 2021 - Aug 2021*

- Constructed a computational method to mathematically model ultra-low coverage scDNA seq data of tumor cells (**Python**).
- Implemented machine learning approach to accurately detect tumor cells in ultra-low coverage single-cell DNA sequencing
- data, optimizing algorithm for approximately **98%** detection across Patient S0 and Patient S1 (**Python**).

Publications

Detecting Distracted Driving Using Computer-Vision Video-Based Analysis *May 2025*

- Russakovsky, Olga; Bogucki, Peter; Ariyo, Toluwanimi, "Detecting Distracted Driving Using Computer-Vision Video-Based Analysis" (2025). *Princeton University Department of Computer Science Journal*. 381.

Projects

Fraud Detection | **Java** *Nov 2023*

- Designed a machine learning model to detect fraudulent credit card transactions with an optimized accuracy of **89%**.
- Performed dimensionality reduction utilizing a clustering algorithm and partitioned points into k clusters. Implemented decision stump ML for the weak learner machine learning model and the boosting algorithm, following with testing.

Additional Information

Languages: Java, Python, JavaScript, HTML, CSS, Matlab, C#, C/C++
Developer Tools: Git, Google Cloud Platform, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse
Interests: Full Stack Development, Applications Programming, Statistical Analysis, Artificial Intelligence, Research, Soccer, Travel