

# BINIYAM GEBREYOHANNES

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## EDUCATION

University of Washington - Seattle

Expected Graduation Date: December 2026

*B.S. in Computer Science*

- **Core Coursework:** Data Structures & Parallelism, Algorithms Design, **Object Oriented Programming**, **OO design**, **Linear Algebra**, Software design, Distributed Systems, Security, Database Management Systems, linear/non-linear programming

## TECHNICAL SKILLS & SOFTWARE PROFICIENCIES

**Back-End:** C, C++, C#, Python, Java, MySQL, PostgreSQL, RESTful APIs, Spring Cloud Gateway, Kotlin

**Front-End :** React.js, HTML, CSS, Next.js, JavaScript/ TypeScript

**ML & AI:** TensorFlow, scikit-learn, PyTorch, Pandas, Computer Vision (OpenCV), YOLOv6

**Tools, Cloud & Infra:** Azure Cloud, GitHub Copilot, Kubernetes, AWS (EC2), S3, DataDog, Jira, Git, Postman

## EXPERIENCE

Software Development Engineer, Expedia

June 2025 - August 2025

- Built a replay-driven traffic load tester and validation framework for Spring Cloud Gateway and Envoy, enabling early detection of performance regressions across **60M+** monthly API transactions with sub-20ms latency at **99.99%** uptime.
- Designed observability tooling with **Kotlin**, **Datadog** and OpenTelemetry to trace request flows, surface outlier behaviors, and automate validation pipelines, reducing triage time by 40% and accelerating incident recovery during gateway deployments.

Undergraduate Researcher, User Empowerment Lab

January 2025 - August 2025

- Published AAAI 2025 paper, [Understanding Privacy Norms Around LLM-Based Chatbots](#): A Contextual Integrity Perspective, presenting a privacy-aware chatbot interface with LLMs that integrated input masking and consent handling, deployed to **300+** users .
- Engineered and analyzed **9,000+** contextual integrity vignettes through the chatbot system to evaluate user privacy expectations across interaction contexts, strengthening methods for privacy-preserving conversational AI.

Lead AI/ML Engineering Intern, STEM TAC

January 2024 – June 2024

- Led a **20-member** team through two phases, each lasting two months, to redesign a real-time facial recognition software using **PyTorch**.
- Redesigned a real-time face detection pipeline using **OpenCV** and **YOLOv6**, improving accuracy by 25% on **5,000+** frames.

Undergraduate Research Intern, University of Washington

June 2024 – August 2024

- Analyzed **12+** months of electricity usage data from **141** mini-grid customers by using **Python** and clustering machine learning algorithms to identify consumption patterns and visualize trends.
- Built predictive time-series **machine learning model** using data mining to forecast energy demand trends with **82%** accuracy.

## PROJECTS

Dr. AI Assistant | [Project Page](#)

September 2024

- **Built** and **deployed** a **Python + Flask** backend serving a fine-tuned **LLaMA** model, enabling **5,000+** remote consultations for undertrained Ethiopian clinics and reducing the patient-to-doctor ratio by **89%**.
- Integrated doctor feedback via **LLMs**, refining backend prompts and model tuning, increasing diagnostic accuracy by **25%**.
- Shipped a fully deployable backend-first AI system with clean **RESTful APIs**, form-based input validation, and structured response formatting built to be scalable, low-cost, and deployable in edge environments with minimal infrastructure.

StockWise | [Project Page](#)

Sept 2024 – January 2025

- Built an AI-powered investment platform using **Java** and **Python** delivering real-time financial news sentiment analysis.
- Integrated **LLaMA** for sentiment analysis and Robinhood **API** for portfolio tracking, reducing user decision-making time by **40%** with personalized automated alerts.
- Led a team of 4 engineers to develop a scalable **React.js** web platform with **99.9%** uptime, preparing for **AWS** deployment to support public user access.

## LEADERSHIP & ACTIVITIES

Excel Students Ambassador, Microsoft

January 2025 – May 2025

- Selected as a Microsoft Excel Student Ambassador, promoting data literacy and showcasing AI-assisted workflows using **GitHub Copilot**.
- Organized Excel skill-building workshops for our campus community (“Excel for Data Cleaning and Excel for Finance 101”).

Hackathon Competition, DubHacks '24

October 2024

- Won Honorable Mention at **DubHacks** 2024 for building a GPT-powered educational assistant to answer student questions and guide them through content in multiple languages.