Helena Tesfaye

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Education

University of Maryland College Park, MD
Bachelor of Science in Computer Science, GPA: 3.6 *May 2027*
Relevant Coursework: Algorithms, Object-Oriented Programming, Computing Systems, Discrete Structures, Database Design
Honors & Awards: Dean's List (6x), Amazon ReachBack University Event, Member of Amazon Women of the World, AWS Certified Cloud Practitioner (In Progress)

Work Experience

Amazon Sunnyvale, CA
Software Development Engineer Intern *June 2026 – Aug 2026*

- Designed a distributed, event-driven orchestration system on AWS Step Functions to automate a manual, error-prone statewide pricing workflow, aligning requirements and integration contracts **across 3 engineering teams**, projected to cut manual processing time by **90%** and save **$500K annually**.
- Authored a technical design document evaluating **distributed-systems trade-offs**, edge cases, and failure modes to select the most reliable solution, driving **stakeholder alignment** and reducing downstream rework.
- Engineered and shipped a production-grade automation pipeline end-to-end, spanning system design, code reviews, and CI/CD deployment, **building a component-level integration testing strategy from scratch** to validate a fully backend system with no user-facing surface.

University of Maryland – Department of Computer Science College Park, MD
Teaching Assistant | Algorithms & Data Structures *Sept. 2025 – June 2026*

- Mentored **40+ students** weekly through review sessions and office hours on algorithms, data structures, and complexity analysis, breaking down complex technical concepts into clear, actionable explanations for a range of skill levels.
- Recognized when standard explanations weren't resonating with students and adapted teaching approaches on the fly, using guided questioning to help students reason through problems independently rather than defaulting to direct answers.

Goodshuffle Washington, DC
Software Engineering Intern *June 2025 – Aug. 2025*

- Refactored backend APIs and implemented a RabbitMQ + WebSocket (Pusher) e**vent-driven architecture** to replace redundant polling, improving real-time data delivery reliability and reducing unnecessary server load.
- Designed and deployed containerized **microservices** using Spring Boot and Docker with **CI/CD pipelines**, powering an AI-driven vendor insights platform with scalable, production-ready infrastructure.
- Synthesized **120+ user survey** responses to align technical features with business goals, presenting findings directly to the Board to inform product roadmap prioritization.

Projects

AWS Banking Simulator | *Lambda, SNS, DynamoDB* | github.com/Nell-Tes/capital-one-aws-simulator Mar. 2026 - May 2026

- Engineered a full-stack serverless banking simulation mirroring Capital One's cloud architecture, implementing an asynchronous transaction pipeline where a Lambda REST API validates requests, publishes to SNS, fans out to SQS, and triggers a consumer Lambda to atomically update DynamoDB balances and Aurora PostgreSQL transaction records.
- Designed a hybrid data model separating concerns across DynamoDB (low-latency profile/balance reads) and Aurora (relational audit history), with IAM-authenticated RDS connections, SSL-enforced access, and a React/HTML frontend served via S3.

Secure Authentication API | *Spring Security 6* | github.com/Nell-Tes/Spring_Boot3_JWT_AUTH Feb. 2026 – Mar. 2026

- Built a stateless Spring Boot REST API securing 20+ endpoints with JWT-based auth and role-based authorization, implementing a custom security filter to validate tokens, extract user details, and update the Spring SecurityContext per request.
- Configured stateless session management, route whitelisting, and DAO-based authentication with BCrypt-encrypted credentials – following OWASP production security standards throughout.

Full-Stack File Upload Application | *Spring Boot, React, AWS S3* |github.com/Nell-Tes/aws-s3-fileupload Sept. – Oct. 2025

- Developed a full-stack file management app with a Spring Boot REST backend and React frontend, integrating AWS S3 for scalable cloud storage and configuring CORS and Axios for secure, consistent client–server communication.

Technical Skills

Languages: Java, Python, JavaScript, TypeScript, C
Backend: Spring Boot, Spring Security, REST APIs, Node.js, Microservices, Docker, JWT, RabbitMQ, CI/CD
Cloud & AWS: AWS Step Functions, Lambda, S3, DynamoDB, SQS, SNS, Aurora DB, API Gateway, CloudWatch
Frontend: React, Angular, Bootstrap, Material-UI
Databases: PostgreSQL, DynamoDB, Aurora PostgreSQL
Developer Tools: Git, Gradle, IntelliJ IDEA, Visual Studio Code, WebSockets (Pusher), GroqCloud