MARKOSE TSEGAYE

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Education

George Mason University   **Dec 2026**
Bachelor of Science in Computer Science (Accelerated M.S. Track)   *Fairfax, VA*

Northern Virginia Community College   **Aug 2022 - May 2024**
Associate of Science in Computer Science   *Springfield, VA*

Relevant Coursework

- Software Engineering
- Analysis of Algorithms
- Database Systems
- Game Design
- Data Structures
- Linear Algebra
- Calculus I - III
- Artificial Intelligence

Experience

Freelance Software Engineer   **May 2025 - July 2025**
Dumpster Masters - Local Waste Management Client   *Fairfax, VA*

- Developed a **React Native** mobile MVP with an **Express.js** backend to handle job dispatch, driver workflows, and in-app photo uploads for **3 pilot drivers**.
- Built interactive **Mapbox** map screens showing real-time pickup/drop-off locations, fully automating route planning and improving driver task completion speed by **60%**.
- Designed and deployed a role-based **REST API** (auth, jobs, billing) with **20+ endpoints** using **Express.js**, **PostgreSQL**, and **Prisma ORM**.
- Delivered the MVP ahead of schedule and secured full client sign-off before the project was paused due to internal reorganization.

Projects

AlgoMinds | *Typescript, Express.js, Next.js, Redis, Docker, PostgreSQL*   **March 2025 – Present**

- Built **AlgoMinds**, a competitive coding platform for solving problems in real time with a **Next.js + Tailwind** frontend and **Express, Prisma, PostgreSQL** backend; containerized with **Docker** and deployed across **Vercel, Fly.io, Azure, and Supabase**, enabling cross-platform scalability and rapid feature deployment. .
- Implemented secure auth (**OAuth**, **JWT sessions**, **MFA**, password reset via **Resend**) with rate limiting and validation via **Passport.js**, protecting against high-traffic abuse and reducing auth-related errors by **90%**.
- Developed a custom **code judging pipeline** using **Judge0**, **Redis** (cut execution latency by **40%**), and **WebSockets** for instant result delivery; powered by **Prisma** schemas for problems, test cases, and submissions with leaderboard tracking.
- Improved platform performance by **70%** through bundle analysis & optimization, custom Next.js configs, reusable hooks/components, **Sentry** monitoring, and developer tooling enhancements, leading to smoother user experiences during peak load.

Forkcast | *XGBoost, Typescript, Python, Node.js, FastAPI*   **June 2025 - Aug 2025**

- Built **Forkcast**, a machine learning–powered platform that predicts restaurant inventory needs using **POS menu item data**, developed with **FastAPI**, **XGBoost**, **PostgreSQL**, and a **React/TypeScript** frontend.
- Created automated **ETL pipelines** to ingest, clean, and aggregate sales data, reducing manual data preparation time by **80%** and improving forecast accuracy
- Integrated interactive dashboards with **real-time visualizations**, enabling restaurant managers to monitor daily, weekly, and monthly demand trends for proactive ordering.

Clubs and Affiliations

ColorStack – National Member   **March 2025 – Present**
Affinity Group for Black & Latinx Computer Science Students   *Fairfax, VA*

Computer Science Club – Active Member   **October 2024 – Present**
George Mason University   *Fairfax, VA*

Technical Skills

Languages: Java, Python, C/C++, C#, JavaScript, TypeScript, SQL, HTML/CSS
Frameworks, Libraries & Databases: React.js, React Native, Node.js, Express.js, FastAPI, PostgreSQL, Prisma, XGBoost
Cloud Platforms, DevOps & Tools: Azure DevOps, AWS, VS Code, Expo, Git, GitHub, Figma, CSV, Redis, Docker, BullMQ, Fly.io