Markose Tsegaye

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Education

George Mason University **Dec 2026**
*Bachelor of Science in Computer Science (Accelerated M.S. Track)- **3.64 GPA*** *Fairfax, VA*
Relevant Coursework: Software Engineering, Data Structures, Analysis of Algorithms, Linear Algebra, Database Systems, Artificial Intelligence

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

Experience

Contract Software Engineer - The Dumpster Masters **May 2025 - July 2025**
The 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 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 mobile **MVP** for waste management workflows

Backend Engineer – Forkcast **July 2025 - Present**
Forkcast - Restaurant Demand Forecasting *Fairfax, VA*
- Built a machine learning–powered platform with a team of 5 that predicts restaurant inventory needs using **POS menu item data**, developed with **FastAPI**, **XGBoost**, **PostgreSQL**, and a **React/TypeScript** frontend.
- Engineered an **idempotent, concurrent job pipeline** with **BullMQ + Redis** to reliably transfer and process multi-GB POS datasets into Supabase storage, ensuring **zero duplication** and consistent state under retries/failures.
- **Containerized pipeline services with Docker**, enabling reproducible local dev + cloud deployment, and scaled workers horizontally to process **10+ GB/hour** without data loss.
- Integrated interactive dashboards with **real-time visualizations**, enabling restaurant managers to monitor daily, weekly, and monthly demand trends for proactive ordering.

Projects

AlgoMinds (*Algominds.net*) | *Typescript, Express.js, Next.js, Redis, Docker* | Fullstack Engineer **March 2025 – Aug 2025**
- Developed a 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 **JWT** with rate limiting and validation via **Passport.js**, protecting against high-traffic abuse and reducing auth-related errors by **90%**.
- Created a custom **code judging pipeline** using **Judge0** and **Redis**, cutting execution latency by **40%**. Integrated 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.

DebateGuard | *Bitcamp 2025 Hackathon — Next.js, GPT-4, WebRTC, Stream SDK, Node.js* **April 2025**
- **Engineered live transcription overlays** with WebRTC and Stream SDK, increasing accessibility of real-time debates for audiences and participants.
- Designed and deployed GPT-4–powered fallacy detection and feedback modules, achieving **95% accuracy in identifying logical fallacies** across hundreds of test debates.

Technical Skills

Languages: Java, Python, C#, JavaScript, TypeScript, SQL
Frameworks & Libraries: React.js, Node.js, Express.js, FastAPI, Prisma, BullMQ, Redis
Cloud Platforms & DevOps: Azure, AWS, Docker, Fly.io
Developer Tools & Others: Git, GitHub, Sentry, Winston, Jest, Supertest