

Joshua Kim

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EDUCATION

University of Michigan, LSA Honors

Ann Arbor, MI

Bachelor of Arts in Data Science and Economics | GPA: 3.98

May 2028

- **Relevant Coursework:** Data Structures and Algorithms (C++), Probability, Web Systems, Machine Learning
- **Activities:** Office Assistant, LSA Tech Services — Analyst, Michigan Data Consulting

EXPERIENCE

Amazon

Seattle, WA

Software Developer Intern (Incoming)

Sept 2026 – Dec. 2026

Federal Reserve Bank of Cleveland

Cleveland, OH

Software Developer Intern

June 2026 – Sept. 2026

- Diagnosed and resolved 14 recurring defects across a **TypeScript/Angular** frontend and **.NET** backend, shipped over 11 releases, stabilizing core file-transfer workflows relied on by credit risk teams of **140+** internal employees.
- Engineered a new metrics system on **AWS Lambda** with **Okta** authentication (**Docker + Terraform, PostgreSQL/DynamoDB**) that tracks employee drug-testing reports against yearly quotas.
- Researched and prototyped an **ML-based prompt-routing** approach for the Federal Reserve's primary internal AI assistant, expanding its scope to Federal Reserve systems nationwide for over **24,000** employees.

Avodah Inc.

Ann Arbor, MI

Software Developer Intern

Jan. 2025 – Apr. 2025

- Developed and deployed a **Node.js + Axios** API framework on **AWS EC2**, processing **10K+ monthly client requests** and streaming real-time audio to the **Soniox** speech-recognition engine for live transcription.
- Configured and optimized **Nginx** reverse proxy and **systemd** services with structured logging and hardened HTTPS routing, achieving **99.9% uptime** and reliable end-to-end streaming to AWS S3.
- Built a type-safe React frontend with input validation and file-upload workflows (PDF/DOCX/XLSX), reducing upload failures from 14% to 2% in testing by eliminating filename collisions for **40+ internal employees**

MTutor

Ann Arbor, MI

Software Developer Intern

Sep. 2024 – Dec. 2024

- Optimized **Node.js** REST endpoints and **MongoDB** aggregation pipelines, redesigned the user/tutor schema with **Cloudinary** media storage, and built responsive frontend interfaces with and upload sanitization and security, cutting server-side API latency **25%** and end-to-end response time **35%** for **50+** Michigan student users.

PROJECTS

Cernova

Jun. 2026 – Present

- Co-building a full-stack anomaly-detection platform (**Next.js, FastAPI, PostgreSQL**, real-time **WebSocket** dashboard) that learns per-step baselines for LLM apps and flags silent failures at **~1ms** overhead; shipped **2 SDKs** (npm + PyPI) with **7+ integrations** and **218 automated tests** in CI.
- Built a 4-layer ML detection engine with **384-dim sentence embeddings**, forward models (ridge regression), and **multinomial logistic regression**, reaching **92%** cross-validated classification and **88–94%** discrimination of wrong outputs under a **conformal $\leq 1\%$ false-positive** guarantee.

RPG Bot

Dec. 2025 – Apr. 2026

- Built a modular Discord RPG platform in **TypeScript** backed by **PostgreSQL** that functions as a community RPG game, an integrated **payment processor**, and a **CRM** system for server administration.
- Designed an event-driven analytics pipeline (structured logs + persistent event tables) and improved responsiveness via in-memory caching and a companion web dashboard, used across **3 servers** totaling **2.1K members**.

File Hosting (DDFH)

Feb. 2025 – Jun. 2025

- Engineered a secure file hosting and reputation-based forum platform (Next.js, PostgreSQL, AWS S3) supporting **5 GB encrypted batch uploads** and **80+ GB** hosted, with **AES-GCM** encryption, **JWT + seed-phrase** auth, and **proof-of-work** rate limiting that cut spam/bot traffic by **90%+**.

SKILLS

Languages: JavaScript, TypeScript, Python, SQL, C++, C#

Frameworks: React, Next.js, Angular, Node.js, Nest.js, Express, FastAPI, Flask, .NET

Technologies: AWS, Docker, Terraform, PostgreSQL, MongoDB, DynamoDB, Redis, WebSockets, scikit-learn, Git

Interests: Sewing, Home Labbing, Coffee, Clothing/Fashion, Magic: The Gathering, World of Warcraft