Akash Mohan

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EDUCATION

University of Wisconsin-Madison — Madison, WI
B.S. in Computer Science, B.S. in Data Science | GPA: 3.66 — *Expected May 2026*

EXPERIENCE

Incoming Software Engineer — June 2026 – Present
Experian — *Chicago, IL*

Software Engineer Intern — October 2025 – Present
Quasar — *San Diego, CA*
- Built a real-time EEG streaming pipeline using LSL and multiprocessing, reliably ingesting & synchronizing 250 Hz hardware signals with zero sample loss and **sub-10ms processing latency.**
- Developed a real-time blink-pattern detector using a 3-second rolling window, derivative-based peak detection, and waveform-symmetry analysis to accurately identify intentional blink bursts under noisy EEG signals.
- Collaborated with neuroscientists in a fast-paced Agile team to design, test, and refine responsive EEG interaction loops.

Software Engineer Intern — September 2025 – December 2025
LawBandit — *Madison, WI*
- Delivered LLM-powered PDF navigation and interactive flowchart visualization using TypeScript and React Flow, implementing **batch-processing** pipelines that cut document parsing time by **45%.**
- Architected an automated syllabus-ingestion pipeline using AWS Lambda, Textract, and S3, asynchronously processing multi-page PDFs with **sub-second per-page latency.**
- Selected from **2,500+ submissions** in a competitive coding challenge to build legal education tools for **3,000+ students**.

Software & Data Engineer Intern — May 2024 – December 2024
Caterpillar — *Peoria, IL*
- Engineered a full-stack rental app prototype (Flask, Next.js) with AWS SES email workflows and geolocation mapping; load-tested APIs to handle **1,500+** concurrent users with **sub-400ms** latency.
- Enhanced Tableau dashboards for **800+** daily users by integrating Python (TabPy) scripts, automating refresh pipelines and reducing manual interventions by **30%.**
- Refactored Alteryx workflows and Snowflake migration scripts, cutting data transfer times by **12%** and improving pipeline throughput.

Data Engineering Intern — May 2023 – August 2023
Skills for Chicago — *Chicago, IL*
- Automated updates for **10,000+** client records via Selenium, Pandas, and PostgreSQL; implemented a no-code scheduling solution (Zapier) to cut manual work by **80%.**
- Built a geocoding + commute-distance microservice (PyXLL, Nominatim) for internal datasets, achieving **96%** location-matching accuracy and powering retention rate analytics.
- Conducted research on unemployment and labor market trends across 5 major cities in Illinois; Analyzed **50+** reports and datasets to drive business decisions regarding regional disparities.

PROJECTS

codebaser | *Tree-sitter, Chroma, AWS S3, OpenAI, TypeScript, PostgreSQL, Docker* | codebaser.app
- Built a developer assistant for rapid codebase onboarding via AST-based chunking, GPT-4.1 summarization, semantic code search, and an S3-backed upload system; processed **15K+ lines** across user and open-source repos.
- Optimized a parallelized Tree-sitter pipeline to extract and chunk function-level code, achieving a **5x** speedup across Python, Java, JavaScript, TypeScript, and Go.

GeoSynth | *TypeScript, LangChain, Celery, PostgreSQL, FastAPI, Redis, Mapbox* | geosynth.app
- Launched a global crisis-analysis platform with LLM summarization, semantic clustering, and spatial search across **12,000+** reports from **150+** countries, visualized on an interactive Mapbox heatmap globe.
- Designed an asynchronous ETL pipeline (Celery, Redis) to process new reports **every 3 hours**, extract structured metadata, and spatially index events in PostGIS for real-time mapping.

OSMatch | *Spring Boot, FastAPI, Redis, MySQL, GraphQL, Scikit-learn, Next.js, Tailwind CSS* | osmatch.app
- Built a personalized open-source issue recommender that adapts to user preferences using TF-IDF vectors and real-time swipe-based feedback across **18 programming languages**.
- Leveraged Redis to track swipes, de-duplicate **100,000+** GitHub issues, and trigger periodic updates via a cron-based GraphQL ingestion pipeline with **sub-1s fetch latency.**

TECHNICAL SKILLS

Languages: Python, Java, TypeScript, JavaScript, C, SQL, Kotlin, Bash, R, HTML/CSS
Web/App Development: Docker, Redis, React.js, Next.js, Spring Boot, FastAPI, Node.js, Express.js, React Native, Flask
Machine Learning & AI: Scikit-Learn, PyTorch, LangChain, Pandas, NumPy, OpenAI, Chroma, Tree-sitter
Tools & Platforms: Git, AWS (S3, Lambda, SES), PostgreSQL, MySQL, MongoDB, SQLite, CI/CD, GraphQL, Celery, Linux, GCP, JWT, Supabase, Zustand, Firebase, Cron Jobs, FFmpeg, Locust