Akash Mohan

akmohan0303@gmail.com | +1 (630) 605-1391 | linkedin.com/in/amohan7 | akashmohan.me

EDUCATION

University of Wisconsin-Madison <div align="right">Madison, WI</div>

B.S. in Computer Science, B.S. in Data Science | GPA: 3.61 <div align="right">*Expected May 2026*</div>

- **Relevant Coursework:** Advanced Data Structures & Object Oriented Programming, Algorithms, Operating Systems, Machine Learning, Data Modeling & Visualization, Database Systems

WORK EXPERIENCE

Software & Data Engineer Intern <div align="right">May 2024 – December 2024</div>

Caterpillar <div align="right">*Peoria, IL*</div>

- Developed a full-stack rental app prototype using Next.js and Flask; tested AWS SES notifications with **50,000+** simulated users at **99%+** deliverability and optimized Google Maps API for sub **500ms** tracking update times.
- Optimized Tableau dashboards for **800+** daily users, improving UX and reducing manual updates by **30%** using TabPy scripting.
- Reduced dashboard refresh time by **10%** by optimizing Alteryx workflows, increasing data processing speed.

Systems & Data Insights Intern <div align="right">May 2023 – August 2023</div>

Skills for Chicagoland's Future <div align="right">*Chicago, IL*</div>

- Automated updates for **10,000+** client records via Selenium, Pandas, and PostgreSQL; implemented a no-code scheduling solution via Zapier to reduce manual work by **80%.**
- Streamlined client address geocoding and commute distance calculations using PyXLL and Nominatim, achieving **95%** accuracy and identifying key trends in Chicago unemployment retention rates.
- 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

Atlascope | *LangChain, Celery, PostGIS, FastAPI, Redis, Mapbox, TypeScript, Docker*

- Developing a real-time intelligence platform that filters and visualizes global events using LLMs, geospatial data, and semantic embeddings.
- Built a robust async pipeline with Celery and Redis to ingest disaster and report data, store it in PostgreSQL/PostGIS, and serve it through FastAPI.
- Integrating LangChain-based QA and semantic search to let users query structured insights; leveraging Mapbox in a Next.js frontend for dynamic heatmaps and event clustering.

OSMatch | *Spring Boot, FastAPI, Redis, MySQL, GraphQL, Scikit-learn, Next.js, Tailwind CSS* | osmatch.app

- Built a GitHub issue recommender system that models user preferences through TF-IDF and cosine similarity, supporting personalized task discovery across **18 programming languages**.
- Leveraged Redis to track user swipes and de-duplicate from a database of **100,000+** GitHub issues, triggering retraining every 25 right swipes with **sub-1s latency.**
- Deployed a scalable monorepo with a FastAPI ML backend, Spring Boot JWT auth, and a cron job-driven GraphQL ingestion pipeline; optimized for sub-**100ms** response times and GitHub API rate limits.

Riffr | *React.js, PostgreSQL, Flask, Spotipy, Ticketmaster API, Google Maps API* | Demo

- Built a full-stack web app to visualize upcoming concerts for a user's top Spotify artists across **88** countries using React.js and Flask.
- Integrated Spotipy and Ticketmaster APIs to fetch and cross-reference over **100,000** global events with Spotify listening data.
- Implemented Google Maps API for interactive venue mapping and used PostgreSQL for persistent user session and event storage.

TECHNICAL SKILLS

Languages: Python, Java, JavaScript, TypeScript, C, HTML5/CSS3, SQL, Bash, R
Web/App Development: React.js, Next.js, Spring Boot, Flask, FastAPI, Node.js, Tailwind CSS, Framer Motion, D3.js
Machine Learning/Data: Scikit-Learn, PyTorch, LangChain, Celery, OpenAI, NLTK, Pandas, NumPy, Matplotlib, Selenium, Tableau, Alteryx
Tools/Platforms: Git, AWS (S3, Lambda, SES), Linux, Docker, Redis, Kafka, PostgreSQL, MySQL, MongoDB, SQLite, GraphQL, Cron Jobs, FFmpeg, JUnit, Firebase, CI/CD, Railway, Postman
Certifications: AWS Cloud Practitioner CLF C-02 (2024)