Andrew Omar Loutfi

United States in linkedin.com/in/andrewoloutfi ✉ github.com/aloutfi

---

IMPETUS

A research-oriented Architecture First Software Engineer with deep specialization in data-intensive Kubernetes microservices written in python.

SKILLS

Languages: Python(3.12), Terraform, JavaScript, SQL, Java, Bash

Platforms and Services: Kubernetes, AWS-(EC2, ECS, CloudFormation, Lambda, CodeArtifact), GCP-(GKE, Cloud Functions, Cloud Run, App Engine, Vertex), Netlify, Heroku, Auth0, ChatGPT, Linux (Raspbian/Debian), Kafka

Tools and Infrastructure: GitHub Actions, Helm, Telepresence, Docker buildx, pre-commit, Ansible

Frameworks: FastAPI, Flask, Django, Pydantic, Pandas, Pytest, Coverage, SQLalchemy, Node.js, React

---

EXPERIENCE

Senior Software Engineer
Torqata   **February 2022 - Present, Charolette, NC**
· Architected & implemented GKE-based Kubernetes microservices for scaleable, inbound & outbound ETL pipelines.
· Conceptualized, evangelized, and executed org-wide OKR for software ecosystem maintainability. Reduced churn & friction by 48%.
· Mentored engineers and managers of all skill levels in implementation, XP, SDLC, and agile paradigms.

Software Engineer
OneOme   **February 2020 - February 2022, Minneapolis, MN**
· Acted in engineering and implementation capacities to deliver patient/provider-facing systems.
· Acted as an intermediary and translator between the software team and various project stakeholders.
· Supported R&D initiatives that increased productivity across the development team.
· Interviewed, onboarded, and transitioned knowledge to a completely new team.

Software Engineer
Minnesota Traffic Observatory   **March 2016 - February 2020, Minneapolis, MN**
· Conceptualized and built a novel Smart Work Zone management system.
· Administered over a fleet of 50 remote data collection and on-premise lab systems.
· Actively contributed to the publication of 2 academic research papers.
· Managed and mentored a team of Computer Science undergraduate students.

EDUCATION

Master's of Science: Software Engineering
University of Minnesota · Minneapolis, MN

Bachelor of Arts: Computer Science
Luther College · Decorah, IA

PROJECTS (ABR.)

Shop Management System (SMS) Integration Pipeline Re-Architecture
Torqata
· Improved scalability of a Kubernetes data pipeline, enabling it to process 7 TB of SMS data in under 5 hours.
· Engineered and implemented bespoke integrations between Torqata and 8,000 rooftop locations.
· Introduced a plug-and-play provenance service to enhance data traceability and integrity. Used by almost every team at the company.
· Reduced maximum load cost in GCP by 28% by converting API call-based handoffs to using a message queue.
· Enabled team to maintain 99.08% up-time, ensuring a reliable data flow to all downstream services.

Cloud Infrastructure implementation and maintenance
Torqata & OneOme
· Developed and deployed container and task-based web and data-intensive applications to GCP, AWS, and Heroku from scratch.
· Maintained, patched, and improved existing cloud-native applications.
· Discovered, vetted, and evangelized new software patterns and technologies for use by development teams across both organizations.

PGx Score
OneOme
· Collaborated with OneOme's data science team to build a cloud-native patient population scoring and stratification ETL Pipeline.
· Optimized system by translating prototype from R to Python, resulting in 238% speed increase.
· Authored comprehensive Software Requirements Specification document for system.
· Ensured HiTrust certification and SOC2 compliance for the system with millions of PHI records.

Publications
· Structural Pattern Matching (talk): https://github.com/aloutfi/pmatch_pymntos.
· Stop Lines Effectiveness and Impact (paper): https://conservancy.umn.edu/handle/11299/216514.
· Statewide Work Zone Information System (paper): https://conservancy.umn.edu/handle/11299/208582.