

Tobby Lie

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EXPERIENCE

Staff Software Engineer

Oct 2021 – Present

Manifold

Remote, USA

Senior & Staff Software Engineer

Sep 2023 – Present

- Designed the platform's first public API and the org-wide standard three services now publish against
- Shipped an MCP server exposing platform tools to LLM agents, with an OAuth broker and encrypted token store
- Architected infrastructure enabling customer-owned AWS accounts as isolated/integrated compute planes
- Engineered the access control service governing Snowflake, AWS IAM, and Auth0 across 17 customer environments, with batched asynchronous permission propagation and dead-letter redrive
- Delivered cloud-cost attribution from design to production in 3 weeks, tagging provisioned resources to funding sources
- Decomposed a monolithic Terraform state into 7 dependency-ordered layers, migrated live with no downtime
- Led major-version migrations of the metadata catalog and identity tooling across all customer environments, de-risked in parallel environments before production cutover
- Shipped a cross-platform CLI and shared API client libraries, retiring hand-rolled HTTP calls across 8 services
- Rolled out a feature-flag and progressive-rollout system (Flipt) for gradual releases across services
- Lead a 3-engineer pod owning the public API and agent-tooling roadmap
- Co-authored the platform engineering technical interview and the code and design review standards the team follows

Software Engineer

May 2022 – Sep 2023

- Built a serverless patient-records ingestion pipeline on AWS Lambda and SQS
- Launched cohort exploration and document search products backed by OpenSearch and a normalized PostgreSQL schema

Machine Learning Engineer

Oct 2021 – May 2022

- Built a production-grade medical-notes NLP summarization system
- Designed an ML training pipeline producing multiple model variants daily on large medical datasets
- Led technical discovery for enterprise AI, scoping a medical-device chatbot engagement

Research Assistant

Nov 2019 – May 2022

University of Colorado Denver – BDLab

Denver, CO

- Developed a real-time ML system monitoring 1,000+ infrastructure points with 90% detection accuracy
- Built physics-guided neural networks improving structural defect prediction by 40% over baseline
- Secured a \$750K grant by developing scalable ML infrastructure enabling team expansion
- Published novel ML monitoring techniques at TriDurLE Symposium and deployed to CDOT production

EDUCATION

University of Colorado Denver

Denver, CO

Master of Science in Computer Science

May 2022

University of Colorado Denver

Denver, CO

Bachelor of Science in Computer Science

May 2021

SKILLS

Languages: Python, TypeScript, Go, SQL, Bash, C++

Cloud & Infrastructure: AWS (ECS, EC2, Lambda, ALB, WAF, IAM, CloudWatch, SQS, S3, RDS, DynamoDB, ElastiCache, Route 53, SageMaker, OpenSearch, API Gateway), Terraform, Docker, Packer, GitHub Actions

Backend Development: FastAPI, Pydantic, SQLAlchemy, Auth0, OAuth 2.0, Model Context Protocol, Flipt

Data Engineering: Snowflake, PostgreSQL, dbt, Alembic, Airflow, OpenMetadata

ML & AI: PyTorch, RAG, LLMs, Anthropic & OpenAI APIs