

LUKE FOURNIER

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EDUCATION

The University of Texas at Austin

Bachelor of Science, Economics

Minors: Computer Science, Business Foundations, Data Science & Statistics

May 2027

GPA: 3.77

EXPERIENCE

Dimensional Funds Advisors - *Software Engineer Intern*; Austin, TX

June 2026 - August 2026

- Designed and built a self-healing remediation engine in Python (FastAPI, Celery, Redis, Kafka) that automatically diagnoses and resolves SQL Server Availability Group failures across a 4-node Windows Failover Cluster, executing safe fixes (service restarts, RESUME HADR) and verifying recovery against a defined cluster-health model to cut manual on-call intervention for common outages.
- Engineered fault-tolerant safety and reliability controls — a Kafka event-sourced incident state machine with crash recovery, a multi-node consensus pre-flight to prevent split-brain actions, kill-switch/dry-run modes, and a pluggable WinRM (Kerberos keytab) / pymssql transport layer — packaged as multi-stage Docker containers running non-root on a RedHat jump host.
- Drove the project through a production-grade SDLC, tracking work in Jira, documenting architecture and runbooks in Confluence, and standing up GitHub Actions CI (ruff, mypy --strict, pytest at 85% coverage) with build artifacts published to JFrog Artifactory, delivering a fully type-hinted, test-covered codebase.

Asure Software - *AI Engineer Intern*; Austin, TX

June 2025 - August 2025

- Independently designed and built a production-ready AI agent for the Canada Tax Branch using Python, AWS Lambda, Bedrock (Claude Sonnet 4), and DynamoDB, delivering a fully-tested solution
- Architected and implemented end-to-end cloud infrastructure leveraging AWS services, establishing CI/CD pipelines with Jenkins and BitBucket, and managing project workflow through Jira
- Drove integration of LLM technology into production software, being a key developer responsible for a customer-facing feature now deployed in Asure's tax compliance platform

LEADERSHIP AND PROJECTS

Shoal Platform Co-founder

2025 - Present

- Built Shoal Platform, a multi-tenant AI agent platform (FastAPI, Next.js 16/React 19) with streaming agentic RAG, multi-provider LLM orchestration, tool-use approval gates, and prepaid billing.
- Designed an end-to-end RAG pipeline — async SQS document ingestion into Pinecone with Cohere/Bedrock reranking — with strict tenant isolation across Aurora DSQL, DynamoDB, Redis, and S3.
- Engineered resilient SSE chat streaming (abort/timeout handling, adaptive text reveal) on AWS ECS Fargate, deployed via Terraform with WebSocket Lambdas and OpenTelemetry tracing.

ADDITIONAL

Technical Skills: Python, JavaScript, TypeScript, Rust, React Frameworks, Docker

Interests: Texas Football, Army West Point Lacrosse, Design, Entrepreneurship

Language Fluency: Intermediate French(currently learning)