

Aktan Azat

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EDUCATION

University of California, Davis

Davis, CA

Bachelor of Science in Computer Science & Engineering; GPA: 4.0

September 2024 – June 2026

- Relevant Coursework: Computer Architecture, Algorithm Design & Analysis, Operating Systems, Probability Theory
- Leadership: Tech Lead at Machine Learning Student Network, Swift Coding Club; Finance Director at SacHacks

De Anza College

Cupertino, CA

Associate of Science in Computer Science, Mathematics, Physics

September 2022 – June 2024

- Relevant Coursework: Data Structures & Algorithms, Object Oriented Analysis & Design, Linear Algebra

EXPERIENCE

Software Engineering Intern

June 2025 – Present

Rigetti Computing

Fremont, CA

- Built production **ETL** pipelines using **Python**, **Apache Airflow**, and **AWS Glue** to process daily fab equipment telemetry (**10M+ rows/day**) with sub-10-minute latency.
- Implemented read-only isolation on source Postgres with session-level checks and DSN collision detection; optimized with server-side cursors and connection pooling.
- Secured data infrastructure with **AES-256 encryption** at rest, **TLS** in transit, **IAM** least-privilege policies, and comprehensive input validation.
- Reduced compute costs **35%** by implementing monthly table partitioning, batch upserts, and **Apache Spark** on **Kubernetes**.
- Achieved **99.9%** uptime SLA through **Prometheus/Grafana** monitoring and automated performance alerts.

Research Assistant

September 2024 – Present

UC Davis Health - Complex Care Laboratory, Division of Cardiovascular Medicine

Sacramento, CA

- Enhanced **CaseOLAP** algorithm by integrating **transformer-based NLP models** (BERT, BioBERT) for medical text mining and clinical entity extraction.
- Optimized cube construction for multidimensional healthcare data analysis using **attention mechanisms** and **contextual embeddings**, achieving **30%** faster query processing.
- Developed semantic similarity metrics using **word2vec** and **sentence transformers** for clinical document clustering and knowledge discovery.

Data Science Intern

June 2023 – August 2023

Quantum Brains

London, United Kingdom (Remote)

- Built **Bayesian optimization** models for sales forecasting, improving prediction accuracy through A/B testing frameworks and statistical validation.
- Developed **RAG-based LLM** system using **LangChain** and **vector embeddings**, automating customer service workflows and reducing response times **60%**.

PROJECTS

Encrypted Voice Companion System

July 2025

- Built secure microservices infrastructure using **AWS Lambda**, **KMS**, and **S3** with **Terraform IaC**, implementing TEE-emulated decryption with AES-GCM 256 encryption.
- Developed cross-platform **@solace/client-sdk** NPM package with **Web Crypto API** integration and **WebRTC VAD** for real-time voice activity detection.
- Integrated **OpenAI Whisper ASR**, **GPT-4 API**, and **AWS Polly TTS** with **React** frontend, achieving **sub-500ms** voice-to-response latency.
- Deployed production **CI/CD pipeline** with **Docker containerization** and comprehensive error handling across 3 microservice components.