Samuel Shine

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Experience

CVC Networks India Pvt. Ltd. Bengaluru, India

Research & Prototype Engineer (Contract) *Jan 2026 – Present*

- Owned **3 multi-agent LLM systems in LangGraph** from scoping to handover; one is now in large-scale testing
- Replaced a manual field survey with a **RAG pipeline** that pulls population figures from verified government sources and cross-checks them against historical data
- Wrote the **evaluation frameworks** for retrieval quality and agent behaviour that decide what goes to production

Machine Learning Engineer (contract from Jul 2025); Data Engineer, Jul–Aug 2024 *Jul 2024 – Dec 2025*

- Built the backend serving ML and LLM models in production (**FastAPI in Docker on Google Cloud**, Kubernetes) and kept it running reliably; productionized RAG-based systems with data and engineering teams
- Data engineer: designed and maintained **ETL pipelines** (SQL, Python) and Tableau visualizations for reporting

Kristu Jayanti Software Development Centre Bengaluru, India

Backend Developer *Oct 2023 – Apr 2024*

- Designed the **PostgreSQL** admissions database and Python REST APIs behind the college platform for **17,000 students and 800 faculty**, automated the admission and interview workflow, and saw it through to go-live

Projects

Credit Risk Intelligence Platform | *Python, SQL, DuckDB, LightGBM, SHAP, Gemini API, FastAPI* 2026

- Scored loan-default risk over **58.5M rows in 8 tables** with 205 SQL features and a calibrated LightGBM (**ROC-AUC 0.79** on a 61,503-applicant holdout); reviewing the riskiest 30% catches **70% of defaulters**, and the approval cutoff is set by expected cost, not 0.5
- Built a **natural-language-to-SQL** chat on Gemini: each query is parsed with sqlglot, checked against the schema, row-capped and run read-only, with adversarial tests on the validator (**119 tests**)

Echelon: AI Security Firewall for LLMs | *PyTorch, Hugging Face, DistilBERT, Go, Ollama, Next.js* 2026

- Built an **OpenAI-compatible LLM gateway** with auth, rate limiting and telemetry that screens prompts and responses in 3 layers: Go heuristics (**under 1 ms**), a fine-tuned DistilBERT for 5 threat types, then an LLM judge
- Curated 41,712 training rows; reported **macro-F1 0.90** in-distribution and 0.52 on a 2,063-row decontaminated benchmark I built, and cut false positives on legitimate security questions from **25% to 15%**

Tesseract: Meeting Decision Tracker | *LangGraph, Google ADK, MCP, Neo4j, Qdrant, React* 2026

- Team of 3: agents reach Neo4j and Qdrant via **MCP tools**; I built human-in-the-loop review and deployed it

CCPA Compliance Analyzer | *RAG, bge-small, ChromaDB, Gemini API, React* Recognition, OpenHack 2026

- **RAG and semantic search** over California's privacy law: 212 subsections embedded into a ChromaDB vector store, top-5 retrieval grounds each verdict, and no violation is reported without a real cited section
- Wrote 64 of 68 commits; Gemini migration: Docker image **∼17 GB → 200 MB**, latency 60–90 s → **under 2 s**

NEWSROOM: Agentic Newsroom Desk | *Python, FastAPI, Ollama, Tool Calling, SSE, React* 2026

- Hand-wrote the **agent loop** (no framework) for 7 agents that route work, call tools, hand off and fact-check against live sources, streaming every step to a React UI over SSE

Agentic Recommender for Higher-Education Decisions | *Paper, first author, under review* ICDDS 2026

- 5 agents with **memory**; judges caught invented claims in **0–9%** of explanations vs 33–64% for a single prompt

Technical Skills

Languages: Python, Java, Go, TypeScript, JavaScript
GenAI & Agents: LangGraph, LangChain, MCP, Tool Calling, RAG, Embeddings, Semantic Search, LLM-as-Judge
Data: SQL, PostgreSQL, DuckDB, ChromaDB, Qdrant, Neo4j, ETL, Data Warehousing, Tableau
ML: PyTorch, TensorFlow, Keras, Hugging Face Transformers, scikit-learn, LightGBM, SHAP
Full-Stack & Cloud: FastAPI, REST APIs, React, Next.js, Docker, Kubernetes, AWS, Google Cloud, CI/CD

Education

Christ University, Bengaluru | *Master of Computer Applications* Jun 2025 – May 2027 (expected)

Kristu Jayanti College (Autonomous), Bengaluru | *BCA with Analytics* Aug 2021 – Jul 2024