Erik Larson

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Education

Georgia Institute of Technology Atlanta, GA

Bachelor of Science in Computer Science, Minor in Economics *Expected Dec 2026*

- GPA: **3.93**; Faculty Honors, Dean's List; Concentrations: Artificial Intelligence & Information Internetworks
- Coursework: Data Structures & Algorithms, Systems & Networks, Machine Learning, Databases

Experience

Software Engineer Co-op, Systems Engineering Jan 2026 – Aug 2026

CodeMettle | Python, FastAPI, React, TypeScript, MongoDB, Kubernetes, GitLab CI *Atlanta, GA*

- Architected an internal developer platform replacing a manual copy workflow across **34 endpoints**, automating assembly, versioning, and deployment of device template and panel packs behind a **501-test** async suite
- Reduced a core configuration API's latency **20x, from 5s to 0.24s**, and cut writes per pack apply **∼660 to 14**, by redesigning per-asset rows into per-type manifests
- Automated the release lifecycle end to end, from semantic-version bumps and Kaniko builds to Helm publishing and auto-generated rollout MRs, making merge-to-main the whole deploy path
- Shipped drift detection, diffing, and revert for versioned asset packs, so any deployed asset traces to its exact commit
- Delivered a real-time telemetry subsystem raising device polling from **90s to seconds** mid-incident, with live-only routing that cut historical writes **8.1x**

Software Engineer Intern, Product Development May 2025 – Aug 2025

CodeMettle | React, TypeScript, Effect-TS, MongoDB, Cytoscape.js, GitLab CI/CD *Atlanta, GA*

- Built a migration utility converting legacy Cytoscape network maps into React Flow topologies, then delivered **15+ features and fixes** for the Terminus edge-node monitoring platform
- Hardened LDAP authentication by normalizing attribute-key casing and converting silent role-resolution failures into explicit fail-closed denials, closing a privilege-misassignment path, backed by **240+ lines of new tests**

Undergraduate Researcher, Financial Services Innovation Lab Aug 2023 – May 2025

Georgia Institute of Technology | Python, PyTorch, pandas, NumPy, AWS SageMaker, BERT *Atlanta, GA*

- Developed a multi-task model jointly learning event extraction and stock movement prediction from financial text, using fine-grained events as distant supervision (AllenNLP, NLTK, Stanza), trained on SageMaker
- Engineered a financial Q&A application on a team of 5 routing queries across GPT-4 and FinMA variants via a fine-tuned BERT classifier reaching **86% routing accuracy**, evaluated on 14 FLARE benchmark tasks

Projects

SECDigest: AI SEC-Filing Analysis Platform | *Python, FastAPI, Next.js, pgvector, Gemini* secdigest.tech | 2026

- Deployed a full-stack AI platform on a **$0 infrastructure budget**, turning SEC 10-K/10-Q filings into financial dashboards and RAG-powered answers, backed by **504 automated tests**
- Devised a free-tier rate-limit architecture for two API ceilings that meter differently: a rolling-window pacer for **30K tokens/minute** and a halt-not-retry error for **1,000 requests/day**
- Designed a section-targeting truncation algorithm (regex location, table-of-contents disambiguation, interval merging, priority budgets) preserving Risk Factors and MD&A in **300K-token filings**

Vigil: Autonomous Incident Responder | *Python, FastAPI, LangGraph, pgvector, React, Azure* Live demo | 2026

- Launched an AI incident responder, live on Azure Container Apps and Vercel at **$0/month**, turning Prometheus Alertmanager webhooks into a likely-culprit commit and Slack brief
- Orchestrated a crash-resumable pipeline for scale-to-zero infrastructure: LangGraph Postgres checkpointing and a cron-driven wake/resume endpoint give exactly-once triage, zero duplicate LLM spend
- Cut LLM usage to **≤3 calls per incident** with a deterministic, anti-hallucination 6-feature commit-scoring engine

House Price Prediction: Southern California Housing | *Python, XGBoost, scikit-learn, pandas, NumPy* 2025

- Owned XGBoost model improvement on a five-person study of 15,474 Southern California home sales, nearly doubling explained variance (**R^2 0.35 to 0.64**) and cutting mean absolute error **$228K to $145K**

Technical Skills

Languages: Python, TypeScript, Java, SQL, JavaScript, C, Bash, R
Backend: FastAPI, Node.js, SQLAlchemy (async), Pydantic, REST APIs, WebSockets, Django, Effect-TS
Frontend: React 18/19, Next.js, Redux, TanStack Query, Material UI, React Flow, Tailwind CSS, Vite
AI & ML: PyTorch, BERT, NLP, RAG, LangGraph, agentic workflows, LLM evaluation, Gemini API
Data & Testing: PostgreSQL, pgvector, Supabase, MongoDB, pandas, NumPy, scikit-learn, XGBoost, pytest, Playwright
Cloud & DevOps: Docker, Kubernetes, Helm, AWS, Azure, GitLab CI/CD, GitHub Actions, Vercel, Linux, Prometheus