

Ansh Kanyadi

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EDUCATION

University of Massachusetts Amherst

Bachelor of Science in Computer Science, GPA: 3.53/4.0

Amherst, MA

Expected May 2028

- **Coursework:** Data Structures, Algorithms, Database Systems, Systems Programming (C), Machine Learning, Discrete Mathematics, Linear Algebra, Probability & Statistics

EXPERIENCE

IBM

May 2026 – August 2026

Software Engineering Intern, Data Lakehouse ([watsonx.data](#))

San Jose, CA

- Cut read I/O by **49%** on map-size queries in Velox, Meta's open-source C++ query engine, by pushing size extraction into the file reader and counting keys with SIMD; merged upstream ([PR #18189](#)).
- Cut a release-gating license compliance review from **~10 hours to 15 min** with a Tekton pipeline on Kubernetes.
- Flagged **25+** vulnerable base layers across ~300 production container images on AWS and Kubernetes with a Go service that scans against a CVE feed and alerts owners, cutting time-to-detection by **80%**.
- Built a mobile app that lets **40+ engineers** steer an internal AI coding agent and approve its tool calls remotely, via a Node.js service that wraps the unmodified agent in a pseudo-terminal and streams it over WebSockets.

Roku, Inc.

April 2025 – July 2025

Software Engineering Intern

San Jose, CA

- Led 5 interns as tech lead on a platform streaming live market quotes for 120+ tickers to TVs in **under 350 ms**.
- Built a Go ingestion service with backpressure over bounded channels, syncing clients at **7x load (~7K msgs/sec)**.
- Cut main-thread load **70%** in the BrightScript TV client to hold 60 FPS by moving state updates to worker threads.

Hammerspace

June 2023 – July 2023

Software Engineering Intern

San Jose, CA

- Built a Django/PostgreSQL scheduling service for ~200 staff, using row-level locking for atomic resource allocation.
- Cut p95 query latency **50%** under concurrent writes by tuning PostgreSQL isolation levels and indexes.

PROJECTS

Rift | Distributed Transactional Key-Value Store | [Go](#), [C++17](#), [Raft](#), [cgo](#) | [GitHub](#)

September 2026

- Built a CockroachDB-style transactional store in Go with Raft and MVCC, sustaining **20K ops/sec** on 3 nodes.
- Wrote its C++ LSM storage engine ([Basalt](#)) with a write-ahead log, hitting **200K writes/sec** via batched cgo.
- Caught **67 bugs** with a deterministic simulator that replays crashes, partitions, and clock jumps across 25,000 runs.

Strata | Vectorized SQL Query Engine | [C++17](#), [SIMD](#), [TPC-H](#) | [GitHub](#)

May 2026

- Built a columnar SQL engine with a cost-based optimizer, hash joins, and SIMD kernels, verified against DuckDB.
- Sped up a TPC-H GROUP BY **8.4x** (211 to 25 ms) with morsel-driven parallelism and thread-local aggregation.

Umbra | Encrypted Local-First Sync Engine | [C++17](#), [CRDTs](#), [libsodium](#) | [GitHub](#)

July 2026

- Built an end-to-end encrypted sync engine for markdown notes on from-scratch CRDTs, merging offline edits across devices with zero conflict files and no trusted server; verified across **3,600+** fault-injected schedules.
- Added on-device AI search (RAG) with local embeddings and a hand-written HNSW vector index, returning cited results in **under 60 ms** over 12K notes, with the index synced as encrypted segments the server cannot read.

Culpa | Debugger for AI Coding Agents | [Python](#), [FastAPI](#), [React](#), [SQLite](#) | [GitHub](#)

March 2026

- Launched an open-source debugger that records every LLM call, tool call, and file change from AI coding agents, then replays or forks sessions offline at zero API cost; works with Claude Code and Cursor.
- Grew to **200+ users** via Hacker News and Reddit launches and shipped a paid tier with auth and Stripe billing.

TECHNICAL SKILLS

Languages: Go, C++, C, Python, Java, TypeScript, JavaScript, SQL, BrightScript

Systems & AI: Distributed Systems, Raft, MVCC, LSM Trees, CRDTs, Concurrency, Vector Search, RAG, LLMs

Infrastructure: Kubernetes, Docker, AWS, OpenShift, Terraform, Prometheus, Tekton, CI/CD, Linux, Git

Backend & Web: gRPC, REST, WebSockets, PostgreSQL, SQLite, Node.js, Django, FastAPI, React, React Native