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EXPERIENCE

KLA Corporation

May, 2026 – Jul, 2026

Software Engineer Intern

Chennai, India

- Engineered a **visualization dashboard** with a custom **JSON DSL query engine** that validates user-defined fields and compiles queries into **T-SQL**, reducing ad-hoc reporting time for internal teams.
- Automated daily activity reporting by building a custom **SKILL package** integrated with **Devin**, streamlining manual reporting workflows.

KLA Corporation

May, 2025 – Nov, 2025

Software Engineer Intern

Chennai, India

- Led development of an **AI agent** with custom **MCP server** replacing legacy chatbot infrastructure, scaling from 4 basic functions to comprehensive autonomous system.
- Accelerated developer productivity by 70%**, transforming **15-minutes-long** manual analysis into automated **30-seconds** intelligent summaries.
- Achieved **80%+** query resolution rate through iterative tool implementation, significantly **reducing** developer dependency on **manual information gathering**.
- Led infrastructure setup and optimization for model inference pipelines, successfully deploying solutions within constrained memory and compute limitations.

CONTRIBUTIONS

Melinia'26 [🔗](#) [🐙](#)

Jan, 2026 – Feb, 2026

Technical Lead

- Led a team of **6** to architect and ship the **end-to-end infrastructure** for **Melinia'26**, owning backend and production ops.
- Deployed a **load-balanced backend** of **4 API instances** behind a **Caddy reverse proxy**, orchestrated via **Docker Compose**, serving **1000+** concurrent users.
- Built the **TypeScript/Hono REST API** on **PostgreSQL** and **Redis**, with **BullMQ** workers and **AWS SES** email.
- Set up **CI/CD** (**GitHub Actions**) and an **observability stack** (**Prometheus**, **Grafana**, **Alertmanager**) for automated deploys and monitoring.

PROJECTS

REZ | *Python, gofastmcp, FastAPI, BeautifulSoup*

[🐙 kottesh/rez-mcp](#)

- Built an **MCP server** for the CIT results portal, with tools for retrieving **student profiles, results, hall tickets, and PDFs**.
- Fetches portal pages with **httpx** and parsed HTML using **BeautifulSoup** to return structured data.
- Secured student sessions using **HMAC-signed tokens** for authenticated portal access.

BITDB | *Rust, crc32fast, clap* (AI)

[🐙 kottesh/bitdb](#)

- Built a **Bitcask-style KV store** in **Rust** with append-only segments, KeyDir indexing, **O(1) reads**, and tombstone deletes.
- Designed **CRC32-validated records** and hint files for fast rebuilds with corrupted/truncated write handling.
- Implemented **crash-safe compaction** that rewrites live keys through a temporary file-set and removes stale records.

CHIPS | *C++, SDL 2, CMake*

[🐙 kottesh/chips](#)

- Implemented a fully spec-compliant **CHIP-8 interpreter** in **C++** with **SDL2** rendering, supporting all original opcodes and platform quirks for legacy ROM compatibility.
- Recreated the original platform's **64x32 monochrome display** and input behavior with a portable **CMake** build.

TECHNICAL SKILLS

- Languages:** C/C++, Python, TypeScript, JavaScript
- Frameworks & APIs:** React.js, Tailwind CSS, Hono, FastAPI, Flask, REST APIs
- AI & Tooling:** MCP, AI Agents, OpenAI Agents SDK, LangChain, Pi, Opencode
- Data Stores:** PostgreSQL, SQLite, MongoDB, Redis, Chroma DB
- Infra & DevOps:** Linux, Docker, Docker Compose, CI/CD (GitHub Actions), Caddy, Prometheus, Grafana, AWS (S3, SES), Git, Vim

EDUCATION

Coimbatore Institute of Technology, Coimbatore, India

Oct, 2022 – Present

Master of Science in Software Systems

CGPA: **9.28/10** (upto 8th sem)

Sri Sowdeswari Vidyalaya Matriculation Higher Secondary School, CBE, India

Jun, 2020 – May, 2022

High School

10th grade: 87%, 12th grade: 92.67%