Yash Derasari

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Education

Santa Clara University - MS in Computer Science Sep. 2025 – Present
Coursework: Advanced Algorithms, Network Technology, Distributed Systems, Machine Learning

Vellore Institute of Technology - BS in Electronics & Computer Engineering Sep. 2021 – Jul. 2025

Technical Skills

Languages: Python, Java, C, C++, JavaScript, TypeScript, SQL, Bash
AI / ML: PyTorch, TensorFlow, Keras, RAG pipelines, vector search, LangChain, MCP Servers, MCP Tools
Backend & Infra: Spring Boot, Next.js, React, REST APIs, Docker, AWS (Lambda, Kinesis, DynamoDB), Git
Data: MySQL, DynamoDB, Vector Databases, signal processing, time-series pipelines

Experience

Application Engineer Intern — Lyten Jul. 2026 – Sept. 2026
San Jose, California

- Replaced a manual SharePoint and Excel diagnostics workflow with an event-triggered Python/Spark pipeline on Databricks that ingests 7M+ historian time series rows into Delta Live Tables.
- Cut daily pipeline runtime from 60–90 minutes to 12 minutes (5–7x) by consolidating 421 serial historian queries per lot into 5 batch queries (84x fewer round trips) and pre-stamping cycle membership at write time, eliminating an $O(n^2)$ range join
- Automated production cycle classification with a multi signal state machine, achieving 96% validated accuracy and exact row level parity against the manual analyst process across 10+ production lots.
- Shipped a FastAPI and React SPA application serving 6 process engineers at sub second latency, with an async semaphore for bounded SQL warehouse concurrency, and tiered LRU/TTL caching that cut warehouse load 80%..

Research Assistant — Santa Clara University Mar. 2026 – Present
Machine Learning and Safety Lab

- Improved Medium-class ergonomic risk F1 by 15 % (0.449→0.604) by systematically ablating 19 model variants, threshold tuning, task-context encoding, probability calibration, and temporal smoothing, across RF and LightGBM under LOSO CV (n=15), validated with Wilcoxon signed-rank test (p=0.004)
- Built a dual-rate wearable pipeline (IMU at 148 Hz, EMG at 1.3 kHz; 120 sessions, 20 workers) that predicted muscle activation from motion sensors on held-out people (median r = 0.64 lower back, 0.72 shoulder); a shoulder-only IMU matched a back-mounted sensor within 0.02 r for lower-back load.

Research Assistant — Santa Clara University Apr. 2026 – Aug 2026
Prof. W. Xie

- Engineered a 4 stage async web scraping pipeline with aiohttp, Playwright, and the Wayback Machine, achieving 85% text extraction coverage across 85,310 firms in LinkUp's PIT dataset and enabling LLM based energy sector classification for economics research.

Data Engineer Intern — Ramboll Aug. 2023 – Nov. 2023
Chennai, India

- Rewrote slow SQL queries across client reporting workflows, cutting execution time meaningfully and unblocking reports that ran daily for 50+ client accounts.
- Built Power BI dashboards that replaced manual weekly reports for the consulting team and became the default view for client reviews.

Projects

LaunchCut - Winner, Best Use of Daytona, Daytona HackSprint SF Link

- Built a multi-agent pipeline that converts any website URL into a rendered promotional video by orchestrating a scraper, scriptwriter, and OpenCode agent across Daytona sandboxes exposed through MCP for isolated Remotion/React code generation and execution.

MCP File Vault - Open Source Link

- Built and published a Python MCP server on FastMCP that gives any LLM client 9 file tools for downloading, saving, and organizing local files over stdio and streamable HTTP, with every operation sandboxed to allowed roots and protected by path traversal checks, extension blocking, and overwrite guards.

Hackathons & Publications

4× hackathon winner — Agents Orchestration Hackathon, Daytona Hacksprint, Autonomous Agents Hackathon.

Efficient medical diagnosis using machine learning algorithm: A comparative study on Cataract detection and analysis