CONTACT

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Pondicherry, India

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SKILLS

PERFORMANCE
Profiling, benchmarking, kernel optimization, bottleneck analysis, low-level compute kernels

LANGUAGES
Python, C++, C, Java, SQL

AI HARDWARE
AI-accelerator software stacks, compute-kernel development

TOOLING
Git & GitHub, CI/CD (GitHub Actions), pytest, PyPI, device/kernel profilers

CLOUD / INFRA
Cloudflare — site hosting, Tunnels, Zero Trust / Access auth; self-hosted services

OTHER
PCB design, Linux & shell scripting

EDUCATION

B.Tech, Electronics & Communication Engineering
Sri Manakula Vinayagar Engineering College, Puducherry
2019 – 2023 • CGPA 8.5 / 10

CERTIFICATIONS

- SkillRack — 300+ problem-solving medals in C & Java
- Python for Data Science — NPTEL
- Great Learning — C, Java, OS & Memory Management
- TCS iON — Career Edge

ASWIN

SOFTWARE ENGINEER

PROFILE

Software engineer working close to the metal on the software that runs on next-generation AI accelerator hardware. I build and optimize compute kernels, profile and benchmark tensor operations, and hunt bottlenecks across the stack to drive device throughput. Equally comfortable owning end-to-end model tracing and validation and building the tooling, dashboards, and cloud infrastructure around the work.

EXPERIENCE

Software Engineer
Jun 2023 – Present
MulticoreWare Pvt Ltd · Chennai, India

- Software engineering for a leading AI silicon company's accelerator stack — developing and optimizing the software that runs on next-generation AI chips.
- Work as part of an element-wise operations team — contributing kernel development, code review, and CI health for unary/binary element-wise ops.
- Author and optimize low-level compute kernels with broad data-type coverage (fp32, bf16, int32, uint8/16/32) and hardware-specific instruction-level work verified against ISA documentation.
- Own end-to-end model tracing and validation with sweeps — reconstructing real model operation traces from a database and validating them against generated sweep tests for exact-match coverage.
- Profile and benchmark kernels with the device profiler, tracking kernel execution time and diagnosing per-core load imbalance to guide optimization.
- Maintain performance-tracking automation and daily/weekly reporting pipelines that flag regressions against historical baselines and correlate them to commits.

Industrial Project Engineer
Jun 2022 – May 2023
Lenovo Pvt Ltd · Pondicherry, India

- Developed and maintained a smart attendance system using face-recognition technology with database integration.
- Built an ESD tester with database-backed logging for real-time test workflows.
- Worked on computer-vision algorithms, biometric authentication, and real-time data processing.

PROJECTS

ttperf — AI-Accelerator Performance Profiler
CLI tool that profiles AI-accelerator compute tests and extracts device kernel performance metrics. Wraps the device profiler with pytest, parses result CSVs, and reports total kernel duration. Published on PyPI. **Python · pytest · PyPI** — **ttperf.aswincloud.com**

Eltwise Performance Tracker
Day-by-day performance monitoring for element-wise operations on AI-accelerator hardware — tracks kernel-timing trends across dates, correlates regressions to git commits, and sends automated alerts on >20% changes. — **ttnn-eltwise-performance.aswincloud.com**

Academic Projects — B.Tech ECE
Embedded & hardware builds: DDS-based portable function generator (up to 12 MHz), Arduino-based portable oscilloscope, 0–30 V / 0–2 A regulated power supply, and a non-contact AC/DC line tester.