

Ravindran S

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SUMMARY

Computer Science undergraduate (AI & ML) with hands-on experience in edge inference, computer vision, and full-stack systems engineering. Built sub-1-GFLOP real-time object detection models for drone hardware and won 2 national hackathons. LeetCode Knight (2085 rating), ICPC 2025 participant. Proficient across AOSP, PyTorch, TensorRT, Go, Rust, CUDA, and distributed backend systems.

EDUCATION

Chennai Institute of Technology — B.E. Computer Science and Engineering (AI & ML) Sept 2024 – Present
CGPA: 9.24 / 10

TECHNICAL SKILLS

- Languages: C, C++, Python, JavaScript, TypeScript, SQL, Go, Rust, CUDA
- ML / AI: PyTorch, TensorFlow Lite, TensorRT, TinyGrad, DeepStream SDK, LangChain, Sentence Transformers
- Systems & Infrastructure: Linux, Docker, Nginx, Redis, MQTT, WebSockets, Git
- Web & Full-Stack: React.js, FastAPI, Streamlit, Firebase
- Core Competencies: AOSP, Computer Vision, Edge Inference, LLM Systems (RAG/Agents), Distributed Systems, GPU Optimization, Multithreading

EXPERIENCE

Drone Technology Team – CIT | NIDAR Competition

Object Detection in Drones | Oct 2025 – Dec 2025

- Engineered a sub-1 GFLOP real-time object detection model (NanoDet backbone, YOLO-style heads), achieving 96% mAP and 30+ FPS on-device inference via TensorRT INT8 quantization.
- Evaluated FP32 vs. INT8 and backbone trade-offs to meet strict compute constraints for autonomous drone payloads; presented results at NIDAR 2025.

AI/ML Virtual Internship – AICTE & EduSkills

Full-Stack Development | Apr 2025 – Jun 2025

- Built and deployed a full-stack web application (React frontend, Flask/Python backend) serving ML model predictions via REST APIs, supporting 100+ concurrent user requests during testing.

Open Source Contributor – AWS s2n-tls

- Contributed patches to AWS s2n-tls (C, TLS 1.3 implementation), addressing documentation gaps and correctness issues reviewed and merged by maintainers.

PROJECTS

MicroDet | TinyGrad, PyTorch, DeepStream SDK, TensorRT (Presented at NIDAR 2025)

- Architected a sub-1 GFLOP detection model (NanoDet backbone + YOLO decoupled heads); achieved 96% mAP@0.5 via TensorRT INT8 quantization, outperforming a MobileNetV2-SSD baseline (~89%) at equivalent FLOP budget.

Archon | Rust, eBPF (Aya), Bubblewrap, libalpm (github.com/ravindran-dev/archon)

- Engineered a security-hardened AUR package manager for Arch Linux that resolves cross-source dependency graphs (official repos + AUR) and sandboxes untrusted build scripts, detecting malicious PKGBUILD behavior via eBPF-based syscall monitoring (execve, openat, connect) with <5% build-time overhead.

Machine Guard | Kotlin, Python, MQTT, Firebase, IoT Sensors (Official Submission @ Ti Forge 2026)

- Architected an end-to-end IoT monitoring pipeline (sensor nodes → MQTT → Firebase → React dashboard) with <200ms alert latency; deployed an on-device quantized TFLite anomaly model at 94% accuracy.

ACHIEVEMENTS, CERTIFICATIONS & OPEN SOURCE

- LeetCode Peak Contest Rating: 2085 (Knight badge holder) • Codechef Peak Rating: 1716 (3*) • Codeforce Peak Rating: 1135 (Newbie)
- ICPC 2025 Preliminary Contest, Global Rank 2605
- Winner — Ti Forge Hackathon (Rs. 50,000 cash prize)
- Winner — AI for Sustainability Hackathon (\$125 + Amazon vouchers worth 300 AED)
- Finalist — TGF 2.0 TechSprint Hackathon (Top 10 of 300 teams)
- Certifications: Cisco — Python Fundamentals, Cybersecurity, Modern AI, Data Science, CCNA (90–100%)
- Open Source: AWS s2n-tls contributor; SWOC participant