Aditya Vikram Mahendru

Software Engineering Intern | AI & ML Enthusiast | Backend & DevOps Developer

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Internship

Software Engineering Intern   Jan 2025 – Aug 2025
Woxsen AI Research Center   Hyderabad, India

- Accelerated ERP deployment speed by 100% (from 40s to 20s) by containerizing 3 microservices using Docker with caching.
- Architected backend for 6,000+ users via REST APIs for holidays, leaves, outing systems using Flask and PostgreSQL.
- Implemented CI/CD with GitHub Actions for automated deployment and sharding support.
- Delivered production ERP leave management system in collaboration with 6 team members.

Projects

Self-Hosted Bare-Metal Kubernetes Cluster   September 2025 – Ongoing
Kubernetes, K3s, MetalLB, Docker, Raspberry Pi, Proxmox, Nginx

- Built a high-availability compute cluster using Raspberry Pi's and recycled hardware, increasing deployment reliability by orchestrating multi-node K3s services.
- Reduced deployment overhead by 60% by implementing a GitOps-driven workflow with automated CI/CD pipelines.
- Improved internal routing performance by configuring MetalLB + Nginx for load balancing, ingress management, and SSL termination.
- Enabled 15+ microservices to run efficiently on low-power hardware by optimizing container resource limits and autoscaling configurations.

Woxsen Student Council, India   May 2025 – Dec 2025
woxsenstudentcouncil.com
Next.js, Tailwind CSS, MongoDB, Redis, Umami Analytics

- Cut hosting and development expenses by 225% (INR 40k to 9k) by migrating from no-code tools to a self-hosted KVM stack.
- Improved API performance by 40% using MongoDB + Redis caching, enabling real-time updates for 600+ students.
- Built a full admin dashboard (CRM) consolidating payments, forms, operational insights, and content controls used daily by student leadership.
- Deployed Umami analytics to capture 10k+ monthly interactions and drive data-backed platform enhancements.

CNN from Scratch in Rust   August 2024 – December 2024
github.com/DeathSurfing/CNN-From-Scratch

- Implemented forward/backward pass of CNN without external ML libraries.
- Built custom layers (activation, pooling, conv) with low-level memory management.
- Gained deep understanding of ML internals and system-level performance.

Technical Skills

Languages: Python (CUDA), JavaScript/TypeScript (Next.js, React), Rust, Bash
Frameworks & Tools: FastAPI, Docker, Tailwind CSS, ShadCN UI, CuPy, NumPy/Pandas, Matplotlib, Ollama
Systems: Linux, Git, GitHub Actions, Proxmox, Kubernetes (K3s), Nginx
Databases & Infra: PostgreSQL, MongoDB, Redis, MetalLB, Cloudflare, Google APIs

Education

Woxsen University   Hyderabad, India
B.Tech in Computer Science and Engineering (AI & ML)   August 2024 – Ongoing