Ashwin R

P: +91 8610261688 | mail.to.ashwinr11@gmail.com |
www.linkedin.com/in/ashwin-r11/ | github.com/Ashwin-r11
|https://portfolio-ryjs.vercel.app/

PROFILE SUMMARY

AI-focused Systems Engineering student with developing experience in Python, Linux, Docker, and backend development. Currently building LLM-based automation tools, infra-safe config generators, and debugging utilities. Interested in creating reliable AI-driven system workflows and ML/LLM integrations.

EDUCATION

SASTRA DEEMED UNIVERSITY **Thanjavur, TN**

Bachelor of Technology **2023 - 2027**

Major in Computer Science Engineering; Specialization in IOT and Automation

Cumulative CGPA: 7.7965/10.0

PROJECTS

Immi-Torch — Educational Deep Learning Runtime (Ongoing)

Tech stack: ***NumPy,Python***

- Built a PyTorch-like deep learning runtime with autograd, optimizers, CNNs, attention, and transformers using NumPy.
- Implemented system-level features (profiling, quantization, compression, benchmarking) to study ML performance trade-offs.
- Added unit tests and GitHub Actions CI for correctness and regression safety.
- Repo link:https://github.com/ashwin-r11/Immi-Torch

RESEARCH/PUBLICATIONS

Research Paper — Federated Healthcare Edge Scheduling (Under Review)

- Proposed a hybrid task scheduling pipeline combining static urgency heuristics with genetic algorithm–based global optimization for federated healthcare edge systems.

- Introduced a Hybrid Decision Point to bypass strategic optimization for ultra-critical tasks, ensuring real-time responsiveness and system fail-safety.

- Designed a resilient reputation-based Byzantine Fault Tolerant consensus mechanism to maintain availability under partial failures.

- Demonstrated improved latency-energy trade-offs and robustness compared to baseline priority-based scheduling approaches.

TECHNICAL SKILLS

Programming : Python, C, C++

Systems: Linux, Bash, Docker, Git/GitHub, Networking Basics, System Monitoring, CI/CD (GitHub Actions)

AI/ML: Numpy, Pandas, Scikit-learn, ML Pipelines, Evaluation Metrics, PyTorch, Transformers (usage)

LLM Engineering: OpenAI/Gemini/Claude APIs, Prompt Engineering, Function Calling, Embeddings, Vector Search (FAISS/Chroma), RAG Basics

AI Systems: LangChain, LangGraph (basic), Streamlit, Gradio

Backend: FastAPI, REST APIs, Basic SQL, JSON

CERTIFICATIONS

- **Docker Essentials: A Developer Introduction** — IBM / Cognitive Class (2025)
- **Human Research: Data or Specimens Only (Basic)** — CITI Program, MIT Affiliates (Valid till 2028)
- **Crash Course: Electronics and PCB Design** — Udemy

LANGUAGES

- **Tamil**: Native proficiency
- **English**: Full professional proficiency