A Akhil

Kanyakumari, Tamil Nadu
+91-7904175297 akhilarul324@gmail.com LinkedIn: a-akhil-16b396201 GitHub: A-Akhil

Summary

Final-year B.Tech (CSE, AI-ML) and aspiring Software Development Engineer with experience designing and building innovative technologies in large distributed computing environments. Proven ability to create solutions from scratch, from scalable data pipelines to complex AI models, achieving over 92% accuracy and reducing processing time by 60%. Adept at handling ambiguous problems and delivering high-quality software in an agile environment.

Experience

Defence Research & Development Organisation (DRDO-CAIR) – *Research Intern* *Dec 2024 – Jun 2025*

- Reduced manual literature review by 60% by developing an automated web-scraping and data structuring pipeline for defence mission datasets.
- Constructed a defence knowledge graph capturing platforms, weapons, deployments and specifications for semantic reasoning and mission analysis.
- Enabled analysts to discover insights through relational querying, improving operational decision-making efficiency.

Indian Space Research Organisation (ISRO-ISTRAC) – *Intern* *Dec 2024 – Jan 2025*

- Developed a recommendation engine for the PRADAN mission data platform using ANN-based similarity search integrated with Voyager and FAISS.
- Improved dataset retrieval performance by 50% and reduced manual mission-data search effort across teams.
- Enhanced semantic indexing and recommendation relevance, enabling researchers to discover mission datasets aligned with specific parameters.

Defence Research & Development Organisation (DRDO-CVRDE) – *Research Intern* *Jul 2024 – Aug 2024*

- Designed an Artificial Neural Network model for Remaining Useful Life (RUL) prediction of BLDC motors used in Armoured Fighting Vehicles.
- Achieved 92% prediction accuracy and reduced fault identification time by 80% using automated diagnostics and anomaly detection.
- Delivered predictive maintenance insights that increased vehicle reliability and minimized downtime.

Samsung R&D – *Research Intern* *Jan 2024 – Jul 2024*

- Built a domain-specific LLM by scraping large-scale product data across the web and creating embeddings for semantic understanding.
- Developed a recommendation system to match users with relevant offers, deals and device configurations based on preference history.
- Fine-tuned query understanding to 85% accuracy and reduced processing latency by 60%, enabling real-time product comparison.

SRM Institute of Science and Technology – *DGX A100 Root Administrator* *2023 – Present*

- Administer and maintain NVIDIA DGX A100 clusters with Kubernetes orchestration, supporting over 100 AI & ML researchers.
- Optimized GPU utilization, resolved driver & kernel failures, and improved experiment throughput across academic research workloads.

Education

B.Tech, CSE (AI-ML), SRM Institute of Science and Technology, CGPA: 9.00/10 2022 – Present
ISC, Maths-Biology, Sacred Heart International School 2021 – 2022

Publications

Zonal HNSW: Scalable Approximate Nearest Neighbor Search for Billion-Scale Datasets June 2025
3rd International Conference on Self Sustainable Artificial Intelligence Systems (ICSSAS)
Developed **Zonal HNSW**, a scalable ANN framework achieving 3× faster search, 98.7% recall@10, and 29% smaller index than FAISS, Annoy, and HNSW on billion-scale datasets. DOI

Traffic Signboard Detection Dataset for Object Detection Models October, 2025
A curated dataset of traffic signboard images for object detection and computer vision research, suitable for training and benchmarking models such as YOLO, SSD, and Faster R-CNN. Released under CC BY 4.0. DOI

Open Source Contributions

Ollama — Contributor 2025

Contributed to the Ollama CLI by implementing the initial `ollama embed` command for generating text embeddings with JSON output. Worked with core maintainers to resolve test failures, improve documentation, and co-author the feature, which was later merged into and unified under the `ollama run` workflow.

Pull Request #12795

Achievements / Awards

First Prize, MIT Anna University Hackathon – National Level

First Prize, IEEE GRSS Hackathon for Data-Driven AI in Remote Sensing (NASA) – National Level

First Place, Smart Campus Hackathon, SRM Institute of Science and Technology – National Level

Finalist, Smart India Hackathon – National Level (out of 2,000+ teams)

Finalist, Dark Pattern Buster Hackathon – National Level (top 5,000+ participants)

Extracurricular / Leadership

President – Cintel Student Organisation, Chennai: Hosted and managed multiple national-level events including Capture the Flag, Ideathon 1.0, Ideathon 2.0, and Digithon 2.0, overseeing planning, coordination, budgeting, and execution.

Technical Lead – Microsoft Student Ambassadors (MSA), SRM, Chennai: Directed technical programs, mentored peers, and organized hands-on workshops and hackathons to foster practical skills in AI, machine learning, and software development.

Volunteer – Cintel Student Organisation, Chennai: Assisted in conducting a workshop for 150+ participants, supporting planning and execution, resulting in 95% positive feedback.

CSR – Cintel Student Organisation, Chennai: Led CSR initiatives engaging with children with autism and mental health challenges at Hope Public Charitable Trust, contributing to their social and educational development.

Volunteer – Seva Bharati, Kanyakumari: Taught computer fundamentals to underprivileged students for 2 months, bridging the digital literacy gap.