

# A AKHIL

Kanyakumari, Tamil Nadu

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## 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 (CAIR) – Research Intern

Dec 2024 – Present

- Reduced manual research by 60% by developing an automated web scraping system to structure defense research datasets from public sources.
- Converted unstructured data into a knowledge graph capturing weapons, countries, platforms, and specifications for semantic querying.
- Enabled actionable insights for analysts by integrating structured data with queryable relationships.

### Indian Space Research Organisation (ISSDC) – Intern

Dec 2024 – Jan 2025

- Accelerated dataset accessibility by 50% by implementing PRADAN recommendation engine using Voyager and FAISS.
- Optimized similarity search algorithms, reducing manual search effort and speeding research workflows.
- Enhanced research efficiency through semantic indexing and improved recommendation accuracy.

### Defence Research & Development Organisation (CVRDE) – Research Intern

Jul 2024 – Aug 2024

- Achieved 92% accuracy in predicting BLDC motor lifespan for Armoured Fighting Vehicles using AI models.
- Reduced fault identification time by 80% through automated diagnostics and anomaly detection.
- Delivered actionable maintenance insights, increasing vehicle reliability and operational efficiency.

### Samsung R&D – Research Intern

Jan 2024 – Jul 2024

- Built Generative AI LLM integrated with web scraping and recommendation systems for scalable product comparison.
- Fine-tuned models to achieve 85% accuracy in understanding user queries, reducing processing time by 60%.
- Implemented a real-time pipeline for handling large unstructured datasets, enhancing performance and scalability.

### SRM Institute of Science and Technology – DGX A100 Root Administrator

2023 – Present

- Administered NVIDIA DGX A100 cluster with Kubernetes, optimizing AI/ML research workloads for 100+ researchers.
- Monitored GPU utilization, resolved system errors, and improved experiment throughput.

## Technical Skills

**Core Concepts:** Object-Oriented Design, Algorithm Design, Data Structures, Problem Solving, Complexity Analysis, Distributed Systems, Fault-Tolerant Systems

**Programming:** Python, Java, C, C++, JavaScript, SQL, HTML/CSS, Bash

**Frameworks/Libraries:** ReactJS, NodeJS, ExpressJS, Flask, PyTorch, TensorFlow, OpenCV

**Tools/Platforms:** Linux, Git, GitHub, Docker, Kubernetes, AWS, Azure, Agile Environments

## Education

**B.Tech, CSE (AI-ML)**, SRM Institute of Science and Technology, CGPA: 9.10/10

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](#)

## Achievements / Awards

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**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

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

**Technical Lead – MLSA SRM, Chennai:** Led technical initiatives, mentored members, and coordinated workshops and hackathons to promote skill development in AI/ML and software engineering.

**Volunteer – Drone Workshop, Cintel Student Organisation, Chennai:** Assisted in conducting a workshop for 150+ participants, supporting planning and execution (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.