




# SANJITH MURALIKRISHNAN

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## Education

### Amrita Vishwa Vidyapeetham

*Bachelor of Technology in Computer Science and Engineering*

2023 – Present

Coimbatore, India

### DAV Boys Senior Secondary School

*Senior Secondary (High School)*

2022 – 2023

Chennai, India

## Professional Experience

### Team Lead – Autonomous Subsystem

Apr 2025 – Present

#### Team *Torpedo*

Coimbatore, India

- Led the development of the AI subsystem for an autonomous ATV, integrating navigation and decision-making logic within a real-time robotics stack.
- Implemented **pathfinding algorithms** in **Carla**, achieving **95% route efficiency** in simulated unstructured terrain.
- Developing the autonomous vehicle for competition in the national-level **SAEINDIA aBAJA** event.

## Projects

### Handwriting Recognition Neural Network | *Python, PyTorch* ([GitHub](#))

Mar 2025

- Designed a deep learning pipeline to interpret handwritten mathematical symbols as unicode with **94% accuracy**.
- Achieved this across **369 symbol classes** over a dataset of **168k+ images** using a **CNN** with **ReLU**, **Adam**, and regularization techniques.
- Integrated **learning rate scheduling** and **dropout** to improve convergence and generalization.

### MomenTerm – Investment Advisor Web App | *Next.js, Yahoo Finance API* ([GitHub](#))

Mar 2025 – Present

- Built a full-stack financial dashboard that delivers real-time market data and ML-based investment recommendations.
- Implemented client-side UI with **Next.js** and integrated live pricing through the **Yahoo Finance API**.
- Trained lightweight models to generate personalized insights based on user interaction history.

### PocketDhamma – Offline Scripture Reader | *Flutter, Dart* (**F-Droid**) ([GitHub](#))

May 2025 – Jun 2025

- Engineered an offline-accessible mobile app to browse and search the Dhammapada scriptures with responsive UI.
- Used **Flutter** to support theming, multi-device rendering, and performant static text search.
- Published on **F-Droid**, **IzzyOnDroid** as a **9.4MB APK** under **GPL-3.0**.

## Research and Publications

### Surgical Instruments Recognition (In Preparation) | *YOLOv12, Deep Learning*

Dec 2024 – Present

- Built an object detection model to identify surgical tools from clinical footage using **YOLOv12** on a domain-specific dataset.
- Achieved **83% mAP** on **23 instrument classes** using a labeled dataset of **7,000+ images**.
- Manuscript in progress for submission to a computer vision conference.

## Achievements

- **Runner-up, PyTorch Hackathon** (IETE Amrita) – Built a handwritten symbol classifier CNN and competed among **250+ participants**.
- **LeetCode** – Solved **250+ algorithm problems**; ranked in the **top 5% globally**. ([LeetCode](#)) ([GitHub](#))

## Technical Skills

**Languages:** Python, C++, Rust, Java, Go, Haskell

**AI/ML:** PyTorch, NumPy, Pandas, YOLO, Jupyter Notebook

**Web/App Dev:** Flutter, Dart, Next.js, React, p5.js

**DevOps/Tools:** Git, Docker, Linux, AWS, Azure, Vim, VS Code, SSH