Sanjith Muralikrishnan

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Education

Amrita Vishwa Vidyapeetham **2023 – Present**
Bachelor of Technology in Computer Science and Engineering *Coimbatore, India*

DAV Boys Senior Secondary School **2022 – 2023**
Senior Secondary (High School) *Chennai, India*

Professional Experience

Team Torpedo – Autonomous Vehicle R&D **Apr 2025 – Present**
AI Lead, SAEINDIA aBAJA Competition *Coimbatore, India*

- Led the AI subsystem for an autonomous ATV, integrating navigation and decision logic in a real-time robotics stack.
- Implemented **pathfinding algorithms** in **Carla**, achieving **95% route efficiency** in simulated unstructured terrain.

Projects

Handwriting Recognition Neural Network | *Python, PyTorch* (GitHub) **Mar 2025**

- Designed a deep learning pipeline to interpret handwritten mathematical symbols as structured digital input.
- Achieved **94% accuracy** on **369 symbol classes** 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** as a **9.4MB APK** under **GPL-3.0**; live in **IzzyOnDroid** since June 2025.

Research and Publications

Surgical Instruments Recognition (In Preparation) | *YOLOv12, Deep Learning* **Dec 2024 – Present**

- Developing 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; competed among **250+ participants**.
- **LeetCode:** Solved **250+ algorithm problems**; ranked in the **top 5% globally**. leetcode.com/u/s4nj1th

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