**NAYAN RAJ**

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**EDUCATION**

**S.R.M. Institute of Science and Technology Chennai, India**

*B.Tech in Computer Science and Engineering Expected Graduation, May 2027*

* **CGPA:** 8.6
* **Related Coursework:** Data Structures & Algorithms, Artificial Intelligence, Object-Oriented Programming, Statistics, Operating Systems, Digital Image Processing, Database Management Systems

**EXPERIENCE**

**Mission Control System for ASV, National Institute of Ocean Technology Chennai,India**

*Summer Intern, Ocean Electronics*

* Developed a **Mission Control System** for an Autonomous Surface Vehicle (ASV).
* Built a Python-based GUI to visualize live GPS data, depth, and sensor status.
* Enabled real-time path tracking with 97%+ GPS accuracy and mission data logging.
* **Tech Stack:** Python, PyQt5, Arduino, LoRa module, GPS sensor, depth sensor, HTML for mapping, and JavaScript

**SRMSAT , S.R.M. Institute of Science and Technology Chennai,India**

*Team Member, Avionics Domain*

*Contributing to the development of a CubeSat designed to monitor the Indian subcontinent.*

* Engineered the onboard computing (OBC) subsystem for a CubeSat, focusing on embedded systems and real-time data processing
* Integrated avionics with structural, thermal, and comms systems in a cross-functional team under the mentorship of Mr. Loganathan Muthusamy (Ex-ISRO Scientist).

**PROJECTS**

**Waste Detection in Water Bodies Using Satellite Images**  [Link](https://aquadocv2-cfjcnhbeqct2gpcpwvezgv.streamlit.app) [Github](https://github.com/NR0498/AQUADOCV2.git)

* Built an automatic waste detection system using OpenCV & Google Earth Engine.
* Processed satellite images to detect waste clusters with NDWI & classification.
* Visualized results for environmental monitoring & research.

**Coral Reef Detection & Classification System** [Github](https://github.com/NR0498/CoralSpotter.git)

* Built a YOLOv8 + deep learning-based app to detect and classify six coral species in underwater images for marine research
* Designed a Streamlit dashboard with real-time processing, dataset tools, and custom training pipelines using Python, OpenCV, TensorFlow, and Scikit-learn.

**JobConnect – Professional Job Board Platform** [Github](https://github.com/NR0498/jobconnect.git)

* Built a Glassdoor-inspired job portal for Indian students with secure auth, advanced filters, verified listings, and global opportunities.
* Developed using React (TypeScript), Tailwind, Node.js, Express, PostgreSQL (Drizzle ORM), and deployed via Replit with CI/CD and serverless DB.

**FLYDemand-Airline Market Demand Analysis Dashboard** [Link](https://56aaxnztep2g8qneefs6n6.streamlit.app) [Github](https://github.com/NR0498/FLYDemand)

* Built a modular AI dashboard using Streamlit, Plotly, and GPT-4o-mini to analyze airline booking trends across Australian cities.
* Integrated real-time aviation data (AviationStack, OpenFlights), reducing API load by 40% and boosting processing efficiency by 35% via optimized caching and architecture

**SKILLS**

* **Programming:** Java, Python, JavaScript, HTML/CSS, PERN Stack, C++, C
* **Version Control:** Git and GitHub
* **Operating System:** Kali Linux, Windows, Ubuntu, Linux(Containers)
* **Frameworks:** Streamlit, OpenCV, Plotly, Pandas, Scikit-learn, OpenAI API, Google Earth Engine, PyInstaller, TensorFlow