MANUPATI RAJU

Bachelor of Technology in Electronics and Communication Engineering
National Institute of Technology, Puducherry
manupatiraju01@gmail.com | ec22b1027@nitpy.ac.in | LinkedIn | +91-7386724026 | 01-11-2003

Profile Summary

An enthusiastic B.Tech ECE undergraduate with a strong foundation in electronics and communication engineering, specializing in embedded systems, circuit design, and hardware-software integration. Proficient in simulation tools like Vivado, Multisim, Arduino, MATLAB, and Ansys Electronics, with practical experience in developing and analyzing real-time systems.Additionally equipped with computer science knowledge, particularly in data structures and algorithms, along with hands-on experience in front-end development using HTML, CSS, and JavaScript. Adept in programming with C++, Python, and Verilog HDL.Demonstrated ability to bridge theoretical concepts and real-world applications through diverse academic projects—such as a glaucoma detection system using image processing and a driver behavior analysis tool powered by machine learning. Also experienced in solving optimization problems using evolutionary strategies like Genetic Algorithms. A collaborative and solution-oriented individual with strong teamwork, communication, and leadership skills.

Education

Degree	Institute	CGPA	Year
B.Tech in Electronics and Communication Engineering	National Institute of Technology, Puducherry	7.88	2022–2026
Senior Secondary Education	SASI Junior College, Tanuku	9.16	2022
Secondary Education	INFANT JESUS (EM) High School, Penugonda	9.33	2020

Experience

•National Institute of Technology-Warangal *May 15, 2024 – Jun 29, 2024*

Project Trainee Warangal

- PROJECT TITLE – Restrained Italian Domination
- Studied domination in graphs and meta-heuristic algorithms for solving complex optimization problems.
- Proposed a Genetic Algorithm-based solution to the Restrained Italian Domination problem.
- Implemented using C++ with evolutionary strategies for efficient exploration.

Projects

•Diagnosis of Glaucoma

Image Processing / Biomedical Application

- Designed and developed an image processing-based system for glaucoma detection using fundus images.
- Focused on the green channel for its high signal-to-noise ratio and enhanced retinal contrast.
- Applied illumination correction and noise removal to improve analysis accuracy.

•Analysis of Driver Behaviour using Machine Learning

Machine Learning / Behavioural Analysis

- Developed a driver behavior classification system using EDA signals by extracting 52 statistical, temporal, and complexity-based features from phasic components.
- Applied Random Forest Recursive Feature Elimination (RFRFE) to select top 10 features, and trained models including SVM, RF, LDA, and MLP for multi-class classification.
- Achieved highest accuracy with SVM, especially in distinguishing Smooth Driving and Turning behaviors, demonstrating a robust framework for real-time driver monitoring.

Technical Skills

- **Languages**: C++, Python, JavaScript, Verilog HDL
- **Tools**: Vivado,Multism,Arduino, MATLAB
- **Core CS**: Data Structures and Algorithms, DBMS, OS, OOPS
- **Soft Skills**: Teamwork, Communication, Problem-Solving, Leadership

Extra Curricular Activities

•Hostel Representative: NIT Puducherry

•Volunteer: Leciel college event

•Kabbadi Team: Represented NIT Puducherry as a member of the kabaddi team in the Inter-NIT Tournament.