

AMRIT RAJ

Undergraduate Student

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EXPERIENCE

Student Intern @ RV College of Engineering

Centre of Excellence (CoE) .Centre for Integrated Circuit and Systems.

Nov 2022 – Dec 2022 Bangalore,Karnataka - On-Site

- **Problem Statement:** Design of 8X1 MUX using MOSFETs.
- Simulated types of ICs in LTSpice simulation software.
- Learned about various Semiconductor Fabrication methods
- Programming in Verilog.

Research Intern @ RV College of Engineering

Centre of Excellence (CoE) .Smart Antenna Systems and Measurements

Nov 2023 - Dec 2023 Bangalore,Karnataka - On-Site

- **Problem Statement** - Design of 2X2 Coaxial feed Array Rectangular Patch Antenna for Illumination of Dielectric Dome Lens.
- **Tasks Performed:**
 - Design of Rectangular Patch Antenna (Coaxial Probe feed) at 13 Ghz.
 - Design of 2x2 Array of Rectangular Patch Antenna (Coaxial Probe feed) at 13 Ghz.
 - Design of Dielectric Dome using Rexolite as the material.
 - Performing analysis on the gain and scattering pattern of the antenna with and without dielectric dome.

ACHIEVEMENTS

- Solved 100+ Problems - Leetcode and HackerRank
- Selected in ISRO Rover Challenge in Astra Robotics as ML Lead
- Manager of Instagram Page and LinkedIn Page for IEEE-RVCE Student Branch

TECHNICAL SKILLS

- MATLAB(Antenna Toolbox/Radar Toolbox), Simulink , HFSS (High Frequency Structure Simulator), Signal Processing using Python, Cadence Virtuoso, LTSpice, Vivado, Linux(Ubuntu)
- C,C++(Intermediate), Java(Intermediate), Python(Intermediate),Robot Operating System(ROS1), Full Stack Development(MERN Stack)

RESPONSIBILITIES

- Chief Coordinator of Frequency Club (Embedded System Club of RVCE)
- Design Lead and Social Media Head of IEEE-RVCE Student Branch
- Member of Design Team of Student Activities Committee (SAC) for IEEE-Bangalore Section.
- Active Member of Astra Robotics (Robotics Club of RVCE)

PROJECTS

Plant Disease Detection

- **Model Used** : Mask R-CNN
- **Libraries Used** : Python - OpenCV
- A ML model was created which used Image segmentation,the formation of patches and bacterial growth was detected and classified from the trained dataset.
- Classified into different categories of infection from the trained dataset.

Object Detection and Classification in Astra Rover

- **Algorithm Used** : YOLOv8
- **Platform Used** : RoboFlow
- Created a model to detect orange mallet and water bottle, which will be detected during motion of the Rover. Trained a model of 100 images with annotations done manually.

Machine Learning Models using Regression Models and Visualization @ OasisInfobyte Company

- **Libraries Used:** Numpy, Pandas, Matplotlib, Seaborn, Sklearn, Plotly
- Worked on ML Projects - **Price Prediction for Cars** and **Iris Flower Classification**
- Worked on ML Projects - **Unemployment Prediction** and **Movie Recommendation**

Home Automation(Blynk App)

- Created a Home automation system using NodeMCU module and 4 relay system where 4 appliances were connected that are a DC fan,leds,DC motor in series connection.
- Used the NodeMcu module to connect to the Blynk app to control the electronics.

Tic-Tac-Toe and Connect4 Game

- **Tech Stacks:** JAVA.
- **Framework** : Swing.
- Developed two games with interactive GUI and Admin Access to the user.

EDUCATION

B.Tech. (ECE) - 7.4 CGPA

R.V College of Engineering

December 2021 – Currently

Higher Secondary - 93.4%

Central Board of Secondary Education

2020

Secondary - 91%

Central Board of Secondary Education

2018