

Murali P Nair

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Education

B.E. Electronics and Communication Engineering with Minor in Robotics, BITS Pilani 10/2021 – present | India
CGPA: 8.38
Relevant Coursework: *Electrical Sciences, Signals & Systems, Control Systems, Digital Signal Processing, Analog Electronics, Analog & Digital VLSI Design, Microelectronic Circuits, Communication Systems, EM Fields and Microwave Engineering*

Projects

Visio, Undergraduate Research Associate 2022 – present
• The project under Prof Sougata Sen ☑ aims to create smart glasses to help visually impaired people
• Using **ESP32s** as edge IoT nodes to run tinyML models for image recognition
• Tested various protocols and standards for communication between ESP32s with **ESP-IDF**
• Creating a capacitive coupling touchpad HID and researching different materials for the same

Project Kratos, Power Lead ☑ 2022 – present
• Project Kratos is a multidisciplinary student team that participates in Mars rover competitions all around the world
• Maintained and managed electronics on the rover
• Developed and executed various programs to estimate the **State of Charge (SoC)** of the rover's batteries
• Designed **Printed Circuit Boards (PCBs)** to create the complete electronic system for the rover

Temperature Control using PID 2021
• Involved in the interfacing of both the heater and thermocouple with the arduino
• Assisted in the design and code for the PID controller

Professional Experience

Summer Intern, APC Technologies ☑ 05/2023 – 07/2023
• Created and simulated a rectangular waveguide in **Ansys HFSS**
• Utilized Ansys HFSS for the design and simulation of **Substrate-Integrated Waveguides**

Leadership and Teaching Experience

Project Kratos, Power Lead 2023 – present
• Technical Lead of the rover team, supervising and guiding all the activities of the subsystem, including timeline and budget
• Managed and divided work among the junior crew members

Peer Mentorship Program, Mentor 2022 – 2023
• Provided guidance and support to freshmen as their first point of contact for both academic and personal concerns

CTE - Intro to Robotics, Instructor present

QSTP - Project Kratos Electronics, Mentor

Proficiency

Tools	Programming Languages	Miscellaneous
MATLAB, EagleCAD, Ansys HFSS, Cadence Virtuoso	C/C++, Python, x64/x86 Assembly	ESP-IDF, Arduino IDE, Linux, ROS

Awards

Winner, Byte Bending Championship, T-Works, Hyderabad 11/2023
• Placed first in a national competition that involved hardware and software problems in embedded systems.

Volunteering

Let's Be The Change, Volunteer ☑ 07/2023 – present

Department of Arts and Decoration, Volunteer ☑