

Aditya Raj Maheshwari

Roll No.:21BEI001

B.Tech - Electronics and Instrumentation Engineering

Institute of technology Nirma University

+91-7984900436

21bei001@nirmauni.ac.in

adityaraj.arm@gmail.com

linkedin.com/in/aditya-maheshwari-arm/

github.com/MaheshBhai/

EDUCATION

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech. Electronics and Instrumentation Engg.	Nirma University	7.4(Current)	2021-Present
Senior Secondary	CBSE Board	90.4%	2021
Secondary	CBSE Board	93.4%	2019

PROJECTS

- **Mission Chandra** Sept. 2023
SAC ISRO Ahmedabad, Domain: Microcontroller integration and UI development
 - Worked with a team of 4 to develop a 1:200 scale of two-stage Chandrayan-3 launch vehicle with parachute recovery.
 - Used Arduino nano with burn wire setup for rocket separation and parachute deployment.
 - Used barometer sensor and saved real time telemetry data logs on SD card connected to onboard Arduino along with sending to ground station.
 - Created a WPF application using C# which acts as ground station and displays real time telemetry data and required graphs.
 - Developed failsafe mechanisms in case of any in-flight error to safeguard the onboard electronics.
- **Aerathon 2023 (Team Captain)** Nov. 2023
Domain: Systems Engineer
 - Lead a team of 10 to develop a multirotor under 2kg with autonomous navigation and payload delivery capacity of 200g along with identification of four hotspots.
 - Worked with NVIDIA's Jetson Xavier NX and ArduCam 12MP camera.
 - Developed custom trained YOLOV5 algorithm for target detection and hotspot identification.
 - Developed algorithm to prevent same hotspot detection due to hotspot being identical in nature.
- **SUAS 2023** June. 2023
AUVSI SUAS 2023: Maryland USA, Domain: Machine Learning and Autonomous Navigation
 - Worked with a team of 10 to develop a multirotor under 25kg with autonomous navigation and five payload delivery each weighing 500g and cover path of 12miles under 30minutes.
 - Worked with NVIDIA's Jetson Xavier NX and Viewpro Q10F 14MP camera.
 - Employed a custom trained improved YOLOV5 based algorithm with transformer prediction head.
 - Developed a new autonomous navigation algorithm for payload dropping with 0.1m accuracy.
- **Aerathon 2022** Nov. 2022
Domain: Machine Learning
 - Worked with a team of 10 to develop a multirotor under 2kg with autonomous navigation and payload delivery capacity of 200g.
 - Worked with NVIDIA's Jetson Xavier NX and ArduCam 12MP camera.
 - Used custom trained YOLOV5 algorithm for target detection.
 - Developed a relative navigational algorithm for payload delivery.

TECHNICAL SKILLS

- **Programming:** C/C++, Python, C#
- **Databases:** MySQL
- **Operating System:** Windows, Linux
- **Other:** Data Structures and Algorithms(DSA), Keras, Tensorflow, Pytorch, ROS, OpenCV, Database Management System(DBMS), Object Oriented Programming in python, mavlink, dronekit, Arduino

KEY COURSES TAKEN

- **Mathematics:** Calculus, Linear Algebra and Ordinary Differential Equation-I, Complex Analysis and Differential Equations-II, Numerical Methods
- **Electrical Course:** Circuit Theory, Basic electronics, Control theory, Industrial Electronics, Electrical and Electronics Measurement, Control System Design, Linear Integrated Circuits, Signals and Systems, Process Control, Transducers and Measurement
- **Computer Science:** Computer Programming, Machine Learning, Microprocessors and Microcontrollers, Cloud Computing, Data Science, Programming with Python and Matlab, Object Oriented Programming, Data Structures, Image Processing

POSITIONS OF RESPONSIBILITY

- **General Secretary**, SAE Nirma Collegiate Club , Nirma University *Jan. 2024 - Present*
- **Team Captain**, Team Arrow, Nirma University *Apr. 2023 - Present*
- **Computer Systems Lead**, Team Arrow , Nirma University *Nov. 2022 - Present*
- **Member**, SAE Nirma Collegiate Club , Nirma University *Jul. 2022 - Jan. 2024*
- **Member**, Student Chapter of the Computer Society of India , Nirma University *Aug. 2021 - Present*

ACHIEVEMENTS

- **Rank 5**, SAE Aerothon 2022, Bangalore *Nov. 2022*
 - **Rank 5 internationally**, AUVSI SUAS 2023, Maryland, USA *Jun. 2023*
 - **Qualified for finales**, Mission Chandra, SAC ISRO Ahmedabad *Sept. 2023*
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