Deepam S. Ameria

dameria@andrew.cmu.edu ♦ (412) 918-9360 ♦ www.linkedin.com/in/deepam-ameria ♦ Website: deepam-ameria.github.io

EDUCATION

Carnegie Mellon University — Pittsburgh, PA
Master of Science in Robotic Systems Development, Robotics Institute | GPA: 4.33 — May 2026
Coursework: Optimal Control and Reinforcement Learning; Robot Autonomy; Computer Vision; Manipulation, Estimation and Control; Robot Mobility; Systems Engineering
Teaching: Mechatronic Design

K.J. Somaiya College of Engineering, University of Mumbai — Mumbai, India
Bachelor of Technology in Mechanical Engineering — May 2023
GPA: 9.08/10.0
Coursework: Robotics and Artificial Intelligence; Mechatronics; Electric Vehicle; Deep Learning with Autonomous Vehicle, Programming in C

SKILLS

Programming Languages: Python, MATLAB, C++, Julia
Tools, Platforms and Frameworks: ROS2, Git, Docker, Linux
Robotics Tools: PID Control, LQR, Model-Predictive Control, Kalman Filter, Arduino, Forward and Inverse Kinematics
Application Software: SolidWorks, Ansys Workbench, Fusion360, Eagle

PROFESSIONAL EXPERIENCE

Yulu Bikes Pvt. Ltd. — Bangalore, India
Graduate Engineering Trainee — July 2023 – Feb 2024

- Designed a mechanical fixture kit to prevent ride-ending battery faults, reducing failures by 40%
- Developed a CAN BUS sniffing algorithm on Arduino and fused IMU data using a Kalman filter from 200+ test runs to enhance motion analysis for electric scooters.

PROJECTS

Motion Tracking and Sword Defense with Franka Emika Panda (ongoing) — Pittsburgh, PA
Robot Autonomy Project, *Robotics Institute, Carnegie Mellon University* — Feb 2025 - Present

- Developing a robotic system that perceives and defends against incoming sword attacks using a Franka Panda arm.
- Implementing real-time sword detection and tracking using deep learning-based methods (YOLOv8-seg, DeepSORT).

Lunar ROADSTER (Advisor: Dr. William "Red" Whittaker) (ongoing) — Pittsburgh, PA
Capstone Project, Robotics Institute, *Carnegie Mellon University* — Sep 2024 – Present

- Developing a lunar rover for Autonomous Development of Surface Trails and Exploration Routes for a simulated lunar environment. Building the control and planning stack to control the dozer blade dynamically .

Two-Wheeled Self-Balancing Robot using Inertial Measurement Unit (IMU) — Mumbai, India
K.J. Somaiya College of Engineering — Aug 2022 – Feb 2023

- Designed and implemented a tilt detection system using an IMU for real-time orientation feedback in Arduino, leveraging the inverted pendulum model for stability control. Integrated all components for autonomous operation.

High Voltage Lithium Polymer Battery Pack for an FSAE Electric Race-car — Mumbai, India
Capstone Project, Orion Racing India, K.J. Somaiya College of Engineering — June 2021 – Aug 2022

- Led the Battery Pack sub-team of 10 members, managing end-to-end development of a 470.4V, 7.9kWh Lithium-Polymer battery pack for Orion Racing India's formula-style electric race car.
- Spearheaded the mechanical design using SolidWorks and ANSYS, thermal management, and electrical architecture of the pack, ensuring compliance with FSAE safety regulations while optimizing power output and efficiency.
- Designed and developed fire-retardant 3D-printed cell holders for the eight-module battery pack (each 58.8V), improving structural integrity, thermal dissipation, and ease of assembly, successfully increasing total power output by ~10%, contributing to improved vehicle acceleration and endurance performance.
- Collaborated with the Electronics Team to design and implement a Battery Management System (BMS) for real-time monitoring of voltage, current, and thermal parameters, enabling fault detection and pack balancing.

EXTRA-CURRICULAR EXPERIENCE

Technical Inspector and Document Reviewer, Formula Bharat - *Coimbatore, India* — August 2023 – Feb 2024
FSAE Participant, Formula Bharat (India) and Formula Student Germany — October 2019 – May 2023