Ashrith Edukulla

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Education

University of Michigan, Ann Arbor, **August 2024 – May 2027**
Bachelors of Engineering in Robotics GPA 3.96/4.0

- **Honors/Awards:** Rank 3 in World Robotics Olympiad, 4-time medalist in International Youth Robotics Contest, 3x American Mathematics Contest (AMC) qualifier, 2x American Invitational Mathematics Examination (AIME) qualifier
- **Relevant Coursework:** Data Structures and Algorithms, Circuit Design, Linear Algebra, Robotics System Control

Work Experience

Michigan Mars ROVER **November 2024 – May 2025**
Embedded software engineer (part-time)

- **Developed embedded software** using the STM32Cube IDE to interface with hardware components such as servo motors, LEDs, and accelerometers.
- **Collaborated with the team** to optimize system performance and ensure seamless hardware integration.

Robotics assistant with LeapLabs, **April 2023 – July 2023**
Intern

- **Taught robotics concepts, guided student**s in project development, and assisted in designing and troubleshooting components for student projects.
- **Collaborated** on course materials and supported the creation of functional robotics prototypes.

PROJECT Experience

Motion-Sensing Robotic Limb **December 2024 – present**
Robotics Engineer

- **Developed an accelerometer-based control system** for a robotic limb, enabling precise finger motion sensing and real-time control.
- **Designed embedded software** to process accelerometer data and convert it into accurate movements for controlling the robotic limb.
- **Integrated and calibrated sensor modules** to ensure stable and consistent tracking of finger movements.

FROST **September 2024 – December 2024**
Robotics Engineer

- **Led the mechanical design** and development of FROST, a robotic black ice detection system aimed at improving pedestrian safety.
- **Developed and modeled** mechanical components using CAD software to ensure optimal functionality and durability.
- **Collaborated** with a cross-functional team, including hardware, software, and communication leads, to design and integrate sensors, de-icing mechanisms, and alert systems.

HighWay Go **July 2022 – October 2022**
Robotics Engineer

- **Designed and developed** HighwayGo, an autonomous highway agricultural robot that automates plant care on highway dividers using a soil moisture detection system and water pump for efficient irrigation
- **Programmed a used robotic arm** with 3D-printed parts and five servo motors to cut leaves in multiple shapes, supported by a mobile app for real-time robot monitoring and control.
- **Integrated renewable energy systems** with solar panels and wind-based electricity generation extend operational runtime while ensuring weather-resistant durability using acrylic and plywood materials.

Other Projects: AutoFarm, Smart Wheel

Leadership Experience

Pre-Indian Mathematical Society, **September 2022 – May 2023**
Founder

- **Organized and led a mathematical camp and examination** for PIMS, the largest non-commercial, student-led organization in India.
- **Developed curriculum covering advanced topics and problem-solving techniques**, ensuring engaging and effective learning. Managed logistics, communication, and participant coordination, facilitating smooth execution and fostering collaboration.

Skills

- Technical Skills: C++, Julia, SolidWorks, differential equation computation, Optimization, Arduino, Sensors & Actuators, Matlab, Data Stuctures, Electromagnetism
- Non-Technical Skills: Teaching, leadership, research, collaboration, problem solving