Rajiv Bharadwaj

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OBJECTIVE

Passionate individual looking for an internship opportunity in Computer Engineering where I can apply my skills in programming and circuitry to make a positive contribution to the group and broaden my understanding of robotics and artificial intelligence.

EDUCATION

University of Michigan *Ann Arbor, MI*

Bachelor of Science in Engineering, Computer Engineering – Robotics and Vision; Minor in Music, Mathematics *May 2022*

- **GPA:** 3.9/4.0
- **Coursework:** Algorithmic Robotics; Data structures and algorithms; Intro to Embedded Systems Design; Intro to Computer Organization; Intro to circuits; Logic design; Discrete mathematics; Linear Algebra; Multivariable Calculus; Differential equations;
- Clubs and Societies – Michigan Men's Glee Club, Michigan Student Artificial Intelligence Lab, Michigan Sahana

Navrachana School, Sama *Vadodara, India*

- High School Diploma, Central Board of Secondary Education (94.4% Final Score) *May 2018*
- Student of the Year (2017-18); Secretary of Ideas and Innovations, General Student Council (2015-16)

EXPERIENCE

Analog Garage – Analog Devices Inc. *Boston, MA*

Systems & Applications Engineering Intern *May 2020 – Sept. 2020*

- Architected an Azure NoSQL database to store metadata for ML datasets and wrote a full-fledged python API to interact with it.
- Learned about signal processing while assessing the capabilities of an ADXL 355 Accelerometer to detect lung sounds.
- Assessed compatibility issues of various sensor drivers associated with autonomous vehicle technologies with the latest robot operating system (ROS) release – ROS Noetic.
- Deployed CI/CD pipelines for a machine learning project to automate various data collection processes

Michigan Electric Racing Team *Ann Arbor, MI*

Controls Division Member *Sept. 2019 - Present*

- Tasked with wiring and reading CAN messages from sensors for the car and programming them according to our requirement.
- Interfaced a battery management chip with STM32 based controllers to track the state of charge of high voltage cells in the car.
- Experimented with various analog to digital conversion methods to reduce latency and improve analog inputs per chip ratio.

University of Michigan Information and Technology Services *Ann Arbor, MI*

Application Development Intern *May 2019 – Present*

- Learned to implement and deploy web APIs using the Django framework for Python to create a robust and maintainable tool for the ITS Networking service called NetDash.
- Collaborated with different teams and wrote an audit logger for a container service API to be integrated into NetDash.
- Utilized test driven development (TDD) practices to write object-oriented programs in Python; deployed continuous integration (CI) pipelines.
- Managed a group of four other interns to create a portal for future ITS interns to communicate with their employers.

University of Michigan Intelligent Ground Vehicle Team *Ann Arbor, MI*

Controls Division Member *Sept. 2019 – Dec. 2019*

- Tasked with developing and testing a path planning system for the robot using the A* Algorithm.
- Developed a working knowledge of the Robotic Operating System (ROS) and implementing the algorithm in a ROS node that relies on various ROS topics such as GPS, Sensor generated cost-maps, and current heading.

University of Michigan College of Engineering *Ann Arbor, MI*

Research Assistant *Sept. 2018 – May 2019*

Project focused on Applications of Passive Dynamic Walking Mechanisms under Dr. Lauro Ojeda.

- Learnt to interface various integrated circuits using I2C protocol; designed and prototyped a printed circuit board that incorporated an inertial measurement unit to improve sensing capabilities.
- Worked on enhancing the current state machine software to reduce latency and lower memory consumption.

SKILLS

Software: Extensive experience in Python 3: Django, OpenCV, SciPy; C++; MATLAB; Docker; Bash; Linux; Git; familiar with Verilog, Azure Cosmos DB, Robotic Operating System, Embedded C

Hardware: Autodesk Eagle, Field-Programmable Gate Arrays, Arduino, Raspberry Pi

Fluent in Hindi and conversational understanding of Tamil (Native Language) and Gujarati