Bhadra Bejoy

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https://bhadrab.github.io/portfolio/

Education

Cornell University, College of Engineering, Ithaca, NY   *Expected May 2024*
Bachelor of Science, Electrical & Computer Engineering

Relevant Courses

Introduction to Circuits, Digital Systems Design Using Microcontrollers, Embedded Systems,
Digital Logic & Computer Organization, Data Science for Engineers, Object-Oriented Programming and Data Structures,
Fast Robots, Introduction to Probability and Inference, Embedded Operating Systems, Foundations of Robotics

Skills

Technologies: Altium, PLECS, Git, Revit, Quartus, JIRA, ROS, Linux
Languages: C, C++, Java, Python, Verilog

Experience

Rivian   *May 2023 - August 2023*
Electrical Engineering Intern
Electrical Systems Team
- ▪ Conducted feature validation and power characterization on R1 low voltage features using electrical benchtop equipment.
- ▪ Used tools such as CANalyzer, CANape, and Tekscope for testing and analysis.
- ▪ Developed feature roadmap for vehicle recovery.

Cornell Electric Vehicles (CEV)   *November 2020 - Present*
Lead - Electrical Sub-team
CEV is an engineering project team that aims to create a highly efficient autonomous electric vehicle.
- ▪ Designed and soldered custom printed circuit boards using Altium.
- ▪ Built a system with ATmega 2560 MCU, I2C interface, SPI communication, and various digital, analog and I2C sensors. To provide the vehicle with self-brake, blind-spot detection, and lighting functionality in compliance with competition rules to meet team expectations and personal goals.
- ▪ Designing the Automation board which bridges software and mechanical autonomy, enabling throttle, steering, and braking autonomous actuation.
- ▪ Created and followed testing plans utilizing an oscilloscope, digital multimeter, DC load, and function generator, to ensure reliability and stability.
- ▪ Participated in an iterative design review process involving prototyping, presenting, testing, and revising with other team members and corporate sponsors.
- ▪ Wrote detailed biyearly technical reports documenting project progress and state, to facilitate future modifications and debugging.
- ▪ As lead, supported all other electrical projects, conducted design reviews, led workshops, developed solutions to increase team motivation and accountability.

Collective Embodied Intelligence (CEI) Lab   *May 2022 - Present*
Undergraduate Researcher
CEI Lab is a research lab at Cornell University.
- ▪ Designing and manufacturing a robot control PCB with a buck converter, motor driver, reverse polarity protection, PID control, and I2C interface for a single-actuator wave (SAW) robot.
- ▪ Analyzed areas of weakness in previous designs and researched methods to improve efficiency, reliability, stability, and ease of construction, through careful component selection and redundancy.
- ▪ Working towards implementing complete automation and inter-robot communication.

Fast Robots   *Jan 2023 - May 2023*
bhadrab.github.io/ECE4160/
Class at Cornell University
- ▪ Modified an RC car to include custom microcontroller, motor drivers, and sensors.
- ▪ Implemented Klarman filter, PID control, Localization using Bayes Filter, Sensor Fusion, and Linearization.

Additional Experience

Electrical Engineering Intern - WB Engineers and Consultants, Girls Who Code - Middle School Volunteer, Tutor - Math, CS & Test Prep, IEEE Member, Server - Agava Restaurant, Crew Member - Dunkin' Donuts, Volunteer - Humane Society, Certified Bharatanatyam dancer