

Shashank Shenoy Basty

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EDUCATION

Boston University

Master of Science, Robotics & Autonomous Systems

Coursework: Medical Robotics, Polymers & Soft Materials, Nanomedicine, Medical Image Analysis with AI, Vision, Robotics & Planning, Learning from Data

Boston MA, USA

Expected January 2025

Visvesvaraya Technological University, BMS College of Engineering

Bachelor of Engineering, Electronics & Communication Engineering

Coursework: Brain Computer Interface, Medical Imaging Modalities, Digital Image & Signal Processing, System Verilog

Bengaluru KA, India

Aug 2023

EXPERIENCE

Electronics Intern - Hardware

Ossus Biorenewables Pvt. Ltd.

- Designed, prototyped, & soldered low power electronic circuitry deployed in bioreactors for production of hydrogen gas.
- Programmed electronic software with 4 different types of sensors such as pressure, hydrogen, oxygen, temperature.
- Utilized 5+ microcontrollers from Arduino family including Uno, Mega, Nano, Wifi Rev2, ethernet shield.

Bengaluru KA, India

Mar - May 2023

Level 1 Research Intern

Foundation for Smart Manufacturing Internship Program, IIT Delhi

- Researched & analyzed emerging trends in smart manufacturing technologies such as AI, ML, augmented reality.
- Identified opportunities for cost savings using CPM & process optimization using PERT.

Remote

Apr - May 2022

SKILLS

Software: Arduino IDE, MATLAB, Python IDE, System Verilog, C programming

Simulation tools: SPICE, Multisim, Cadence Virtuoso Design Suite, Xilinx Vivado, CST Studio suite

Robotics: Human Robot Interactions, Circuit Building and Design, Robot motion planning, Robot control systems, CAD

Languages: English, Konkani, Hindi

Others: Microsoft office, Canva Design, Project Management, Technical Documentation

PROJECTS

Wrist rehabilitation robot using McKibben actuators controlled by EMG

Oct - Dec 2023

- Built soft robot actuated by EMG signals from forearm operating a setup consisting of AD8226-based EMG sensors, Arduino Uno, McKibben actuators, MOSFET and Solenoids
- Tested the system, achieving a flexion angle of 35.42 for wrist movement close to required 38 for normal functioning
- Performed the NASA task load assessment (TLX) to assess ergonomic performance of design

Soft robotic sleeve for haptic feedback for robot-assisted surgery

Oct - Dec 2023

- Engineered dual-inflation soft robotic sleeve with an LCD display for visual feedback of force sensor readings
- Utilized MPRLS pressure sensors, Force Sensing Resistor and LCD display to relay FSR values
- Assessed performance of design using TLX resulting in a 20 point decrease in TLX score

Finger rehabilitation soft robot utilizing photodiode sensors

Oct - Dec 2023

- Constructed soft robotic glove for finger rehabilitation, employing a master-slave system with photodiode sensors, custom-designed 3D printed PLA rings, and stepper motor combinations
- Conducted a TLX to evaluate effectiveness of design
- Analyzed the design, achieving average percent error of 10.6%, allowing prototype to replicate natural finger movements

A comparative Study of Classical Linear Feature Selection Methods

Oct - Dec 2023

- Analyzed real estate dataset with 500+ datapoints leveraging normalization techniques and conducted comparison between Ridge regression and LASSO regression on MATLAB.
- Inspected LASSO's superior model interpretability (75% more than Ridge Regression) and Ridge Regression's effectiveness in managing multicollinearity within dataset, leading to more accurate predictions and insights

Additional projects- An efficient algorithm for D2D Communications employing Non-orthogonal multiple access (NOMA), Camouflage robot for basic military applications, RFID based smart car parking system, RFID based inventory management system

LEADERSHIP & AFFILIATIONS

President, BMS Model UN Society

Oct 2022 - Apr 2023

- Organized BMS Model United Nations Conference in January 2023 with over 200 participants from all across India
- Trained over 40 members of the society in Model UN conference procedures and modes of debate
- Participated in over 50 Model UN Conferences representing various nations; winning accolades such as best speaker
- Student Convener, BMSCE Dept. of ECE Annual Magazine Committee**

Apr - Nov 2022