SADMAN KABIR

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EDUCATION

BOSTON UNIVERSITY

B.S, Computer Engineering. **Expected May 2025**

Minor in Systems Engineering.

Concentration in Machine Learning.

Relevant Coursework:

Machine Learning, Computer Networking, Computer Organization, Signals and Systems, Robotics.
Software Engineering, Algorithms and Data Structures, Computer Organization, Electric Circuits, Digital Logic Design.

SKILLS

TECHNICAL SKILLS: C++, C, Verilog, MATLAB, Python, Machine Learning, JavaScript, HTML, CSS, CAD, Verilog, MIPS AL, Socket programming.

TOOLS/LIBRARIES: OpenCV, ROS2, PyTorch, Electron, Flutter, NumPy, scikit-learn, MongoDB, Flask, Jinja3, Bootstrap, Xilinx Vivado, UNIX, Git

WORK EXPERIENCE

Software Engineering Teaching Assistant

Giant Machines Software (now part of Deloitte Digital)

- Mentored and instructed externs and fellows representing Citadel Securities, Bank of America and MasterCard.
- Lectured students on python, web development using HTML, CSS, Flask, MongoDB, and Bootstrap.
- Fostered good interview etiquette, taught essential algorithms, data structures and CS principles.
- Rebuilt curriculum, wrote test cases and new problems, and dynamically adjusted instruction to care for students of varying skill levels.

PROJECTS

ResNet Convolutional Neural Network

- Built simplified ResNet model to classify images from Cifar-10 Dataset.
- Utilized PyTorch and CUDA supported GPU for training through 30 epochs.
- Ultimately achieved ~90% classification accuracy.

Autonomously Navigating, Vision Enabled Robot

- Programmed robot with semantic segmentation functions using OpenCV.
- Implemented auto navigation using PID control from camera input to motor speed and angle.
- Developed communication of various system elements using ROS2.

Automated Course Registration Application

Designed and programmed the front-end of an application that registers students for classes in advance.

- Implemented Flutter SDK for front-end development of Desktop Application.
- Used web-scraping with Selenium to obtain course registration information and catalog numbers.
- Integrated Flask microframework with pure python backend to send and receive requests.

FPGA Number Guessing Game

- Hardware description written and designed in Verilog.
- Demonstrated understanding of finite state machines, Boolean algebra, analysis and design of combinatorial and sequential circuits.
- Developed and synthesized with Xilinx Vivado and tested on FGPA, passing 100% of test cases.

Command Line Interface Pokémon

A video game run through CLI focusing on demonstrating master of OOP principles.

- Written in C++ and run as a robust CLI application.
- Utilizes mastery of OOP principles, including inheritance, polymorphism, abstraction, and encapsulation.

INVOLVEMENT

Boston University Mars Rover Club – Control Systems Sub team (Fall 2022 - Present)

- Focusing on programming robotic arm behavior with ROS2 and Moveit 2.
- Leverage understanding of Machine Learning algorithms and libraries such as OpenCV for autonomous navigation.

Liquid Fun! BU

- Member and participant in BU's premier improv comedy club.

BU Book and Ink

- Engage with peers on writing and reading literature.