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

Research Intern

Boston University, China Historical Christian Database (CHCD) (Sept 2024 – Present)

- Focusing as technical intern on migrating backend from neo4j database to PostgreSQL.
- Rewriting queries and API calls to improve performance post migration.
- Attending recurring progress meetings with fellow interns as database formatting continues.

Software Engineering Teaching Assistant (May 2023 – August 2023)

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.**

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.
- Web-scraped with Selenium to obtain course registration information and catalog numbers.

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.

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

- Engaging with peers on writing and reading literature.