SADMAN KABIR

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EDUCATION

BOSTON UNIVERSITY

B.S, **Computer Engineering**. Expected May 2025
Concentration in **Machine Learning.**

RELEVANT COURSEWORK:
Machine Learning, **Cybersecurity**, Computer Networking, **Computer Organization**, Signals and Systems, **Robotics**, Software Engineering, Algorithms and Data Structures, **Electronic Circuits**, **Digital Circuit Design**.

SKILLS

Languages/Design Abilities

C++, **C**, **C#**, **SQL**, Python, JavaScript, Java, **Verilog**, **Electronic/Digital Circuit Design**, Socket Programming, **OOP**, Systems Engineering, **Robotics**, Computer Vision, **Machine Learning**, UI/UX Design, **Full-stack Application Development**, Microcontrollers, **CAD**.

Tools/Libraries

TensorFlow, **PyTorch**, **OpenCV**, **ROS2**, **Xilinx Vivado**, .NET Frameworks, **OnShape**, MATLAB, Jupyter Notebooks, WireShark, **UNIX, Bootstrap, REACT Native,** Electron**,** Visual Studio**,** Flask**, NodeJS, Express JS, MongoDB, PostgresSQL**, SQLite**.**

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.**
- Reworked queries, API calls and database architecture to **improve performance** post migration.
- Discovered **vulnerabilities**/bugs in system, later **implemented solutions.**

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.**

FPGA Video Game

- **Designed RTL circuit** in **Verilog**; integrated 7 Segment Displays, switches, and buttons to create 2 Player FPGA game.
- **Wrote numerous testbenches** in Xilinx Vivado, and fit to FPGA, passing **100% of test cases on board.**
- Demonstrated proficiency in implementing **FSMs**, **behavioral, and structural Verilog**, and **verification techniques**.

INVOLVEMENT

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

- Focusing on programming robotic arm behavior with ROS2 and Moveit 2.