

# SADMAN KABIR

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## EDUCATION

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### BOSTON UNIVERSITY

**B.S, Computer Engineering.**  
Concentration in **Machine Learning.**

Expected May 2025

### 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

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### 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, PostgreSQL, SQLite.**

## EXPERIENCE

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### 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

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### 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.**

## INVOLVEMENT

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### Boston University Mars Rover Club – Control Systems Sub team

(Sept 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.