SADMAN KABIR

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EDUCATION

Boston University — Boston, MA
B.S, **Computer Engineering** — Expected May 2025
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

WORK EXPERIENCE

Software Engineering Teaching Assistant
Giant Machines Software (now part of Deloitte Digital) (May 2023- August 2023)

- 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.

SKILLS

TECHNICAL SKILLS: C++, C, MATLAB, Python, Machine Learning, Verilog, JavaScript, HTML, CSS, CAD, Verilog, MIPS AL, Socket programming.
TOOLS: UNIX, Git, ROS2, VSCode, Flutter, NumPy, scikit-learn, MongoDB, Flask, Jinja3, Bootstrap, Xilinx Vivado, Electron.
LANGUAGES: Fluent in Bengali. Conversational proficiency in Japanese.
BEHAVIORAL: Responsibility delegation/management, team communication, time management, teaching ability.

PROJECTS

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
A two-player number guessing game written and designed with Verilog.

- 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.

Homemade Neural Network
A neural network made with just NumPy and scikit-learn.

- Built multi-layer perceptron algorithm that correctly identifies samples from the MNIST dataset with greater than 97% accuracy.
- Implemented backpropagation, ReLU and sigmoid activation functions, and plots performance with confusion matrix.
- Used only scikit-learn, NumPy, and Keras API for dataset importation.

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.

Top-down Indie RPG – Title: "Under the Poplar Tree"
A WIP 2D pixel art game, as a passion project.

- Creating assets including sprites, animation and level design with Aseprite.
- Programming game with C# in Godot engine.
- Writing story, characters and dialogue for story rich game.

INVOLVEMENT

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

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