

Muhammed Suleman Thaniana

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"Aspiring engineer aiming to play a part in the betterment of humanity"

EDUCATION

Massachusetts Institute of Technology

Cambridge, MA

Bachelor of Arts in Electrical Engineering and Computer Science — GPA 5.0

Aug. 2019 – May 2023

Relevant Coursework: Algorithms, Fundamentals of Programming, MicroComputer Lab, Computation Structures, Circuits, Autonomous Machines, Weblab, Signal Processing, Physics, Economics, Diff Eqs, Toy Product Design

EXPERIENCE

Undergraduate Research Assistant

June 2020 – April 2021

Signal Kinetics Group, MIT Media Lab

Cambridge, MA

- Working with the Oceans team to build an underwater, wireless battery free camera system that harvests energy from back scatter of acoustic signals, whilst using the same signals for communication.
- Worked with various low power micro-controllers and image sensors to construct an ideal embedded system.

Undergraduate Research Assistant

Sep. 2019 – Mar. 2020

Doyle Lab, MIT

Cambridge, MA

- Made and analysed micro-particles to remove organic pollutants from water.
- Collected size data of the particles using ImageJ alongside collecting performance data using an IR spectroscope. Compiled, analysed and evaluated the data collected using Python and Matlab.

Lab Assistant Interconnected Embedded Systems

Feb. 2021 – Present

EECS Department, MIT

Cambridge, MA

- Help students during Lab and Office Hours with their lab and class exercises.
- Debugged hardware connections and software written in C.

STEM Tutor

Sept. 2018 – July. 2020

Gopeer

online

- Taught High School Students STEM subjects on an online classroom

LEADERSHIP

The Tech | Sports Editor and Writer

Sept. 2019 – Present

- Cover weekly MIT sports on the Tech and manage the department as Editor.

Sigma Nu | Risk Reduction Chair

Sept. 2020 – Feb. 2021

- Responsible for the safety of the members and guests at fraternity events.

PROJECTS

SnESPchat: A system that runs on an ESP32 micro-controller. It can take, display pictures on an LCD and save the pictures on an online server. The MCU runs using C, whilst the system as a whole uses SQLite and HTTP protocol.

Autonomous Machine: A mini car with various autonomous capabilities like line following, object detection and color response. The machine uses an Arduino MEGA that runs averaging and filtering algorithms using C++.

Intervals: A web application with the main goal to help people with creating custom routines.

Pokerbot: A bot programmed to play poker and compete with other such bots.

Shark Attack: A toy product with a goal of crossing a rotating top without bumping with a shark. The structure was built using wood and cardboard, while the electronics were managed using an Arduino Uno.

AWARDS AND ACTIVITIES

International Chemistry Olympiad: Bronze Medal in 2018.

MIT Cricket Team: play on the team as a wicket keeper batsman.

GM Blacktop Build: Won third place in the competition that worked on finding autonomous driving solutions.

TECHNICAL SKILLS

Programming Languages: Python, C/C++ , HTML/CSS, HDL, MATLAB, Assembly, Javascript, React, Shell

Frameworks/ Developer Tools: Git, SQLite3, Xcode, Arduino, Code Composer Studio, Vim, CAD, REST API

Micro-Controllers: Intel 8051, Cypress PSoc, TI MSP430, ESP32, Sparkfun Edge, Arduino

Languages: English, Urdu (speak Hindi), Arabic