

Capable and confident in my work, with an excellent ability to communicate with my peers and devise complex yet efficient engineering solutions to any problem that may arise. Proficient in several languages and their associated tools and very quick to learn new skills.



<https://samin50.github.io>



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Website



London, United Kingdom

SKILLS

UI/UX Design

Big Data

Quartus

Communication

Verilog

FPGA

Computer Vision

Teamwork

Machine Learning

Dynamic Programming

Leadership

Big Data Analysis

Sentiment Analysis

NLP

AWS

PyTorch

LANGUAGES

Python



C/C++



Java



SQL



Verilog



HTML/TailwindCSS



EXPERIENCE

Amadeus IT Group - Software Development Engineer

04/2023 - 10/2023

- Designed two internal tools for the company, written in Python, one of which interacted with Atlassian's Confluence API to automatically scan, repair and update pages using a front end of my own design. This tool saved several hundred hours of manual work for the company and several demos were hosted to showcase the tool to other teams. The second tool analysed an Amadeus product written in Java to produce tabulated data that was essential for documentation that went to the customer. Again, this tool saved several hundred hours of manual work.
- During my time at Amadeus, I hosted several demos to showcase my work to other teams and received very positive feedback, and delivered a powerful final presentation to several senior members of the company and it was very well received.

Jacobs - Software Engineer Intern

07/2019 - 08/2019

- Designed a webscraper that was used to gather and extract the necessary data and condense it into a CSV (to be edited in Excel) for my peers who would have otherwise undertaken this manually. The achieved throughput was 120 websites/minute, (then intentionally bottlenecked to prevent overloading the server).
- Used a combination of Natural Language Processing, Twitter API, PowerBI, SQL, AWS and Python to create a program that would elegantly display the public's 'sentiment' towards any specific keyword or phrase. A database was used to store the anonymized data and queried to show the graphs on the PowerBI interface.

EDUCATION

Imperial College London - Computer Engineering MEng

06/2020 - Present

Digital Circuit Simulator and Simplifier (01/2019 - 12/2019)

- Developed a digital circuit simulator and simplifier Python that was capable of producing an SOP expression for a given constructed logic circuit. The program also generated truth tables and had several advanced features such as the loading and saving of circuits.

Dual Core CPU Design (06/2021 - 07/2021)

- Successfully designed and tested a working dual-core CPU at gate-level and executed a program to find the mean value of integers in an array in memory. The program was hardcoded into the simulated RAM and performed twice as fast as its single-core counterpart.

Building a C-Compiler (02/2022 - 03/2022)

- Built a functioning C Compiler to generate MIPS Assembly from C code, represented using Abstract Syntax Trees and lexing/parsing using Flex, Bison and High-Level C++ OOP.

Digital Systems Design (01/2023 - 04/2023)

- Optimised and translated a mathematical function in SystemVerilog for efficiency and speed which was to run on an FPGA.

Group Project: Online FPGA-Controlled Motion-Based Drawing Game (02/2022 - 03/2022)

- Using a NIOS II Processor and Accelerometer on an Intel FPGA, we created a multiplayer drawing game (each client on different networks) that used the FPGA as a drawing tool/stylus. The accelerometer data passed through a moving-average filter, to enable smoother inputs for the user - all drawing tools were made available to the user through the FPGA's buttons and switches, and the user's score was shown clearly on the 8-segment displays.

EDUCATION

Group Project: Mars Rover (05/2022 - 06/2022)

- Fully autonomous Mars Rover which scanned the environment using a Computer Vision algorithm written in Verilog and C that I developed - the Rover had the task of avoiding coloured balls as obstacles in an unevenly illuminated room. The designed algorithm was able to identify the distance to each distinct target and performed HSV conversions to find them. Additionally, the algorithm was able to perform noise rejection, and ignore any cluster of pixels that were not part of the larger body of the obstacle.

Group Project: Pet Feeder (10/2022 - 01/2023)

- Developed a IoT pet feeder that could accurately weigh and dispense food into a bowl. I took charge and designed the entire mechanical workings of the system using my 3D printer and CAD software. Later, I integrated Computer Vision into the controller's camera to provide the ability of distinguishing between different pets.

Group Project: Embedded Piano (01/2023 - 04/2023)

- Wrote the firmware for interconnecting piano modules to play and record piano using different piano voices. The piano supported 8 key polyphony, limited by the hardware constraints of the modules.