

Shaheen Amin

Software/Hardware Engineer

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>



Contact on 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

Excel

AWS

LANGUAGES

Python

C/C++

Java

SQL

Verilog

EDUCATION

Electronics and Information/Computer Engineering MEng

Imperial College London

06/2020 - Present

Learned skills include, but not limited to:

- Computer Architecture
- Quartus + Intel FPGA
- Dynamic Programming
- Web Development
- Machine Learning
- Verilog-based Computer Vision
- Linear Algebra
- OpenGL and Raytracing

PROJECTS

Portfolio Website (05/2023 - Present)

- On my website you will be able to see my projects in much greater detail. Developed using HTML, Tailwind CSS and ReactJS.

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

- Developed a digital circuit simulator and simplifier in C++

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)

- Working with one other pair, we 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.

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.

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.

EXPERIENCE

Software Engineer Intern

Jacobs

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.