

Scott Kikumu.

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Personal Profile.

I am a final year international student completing my BSc (Hons) in computer science at the University of Hull. Throughout my academic year, I have developed a massive interest in the field of Machine learning. You can see this in some of my extra-curricular projects on my GitHub. I have developed teamwork, communication, and planning skills throughout my academic experiences which I am ready to prove in my career as a professional. Furthermore, I am interested in developing my skills to engineer solutions that will make a positive impact. I applied to this role as I believe it will allow me to fulfill these interests. Some of my hobbies include working out at the gym, playing PC games, chess, and programming robots with a Raspberry Pi 3 Model b.

Education.

BSc computer science - University of Hull – Hull, United Kingdom (2016 to Present).

Foundation year result: (2:1)

First-year result: (2:1)

Second-year result: (2:1)

Final year expected result: (2:1)

Relevant modules	Results
Dissertation: Using depth search to make a Pathfinding robot	First (1:1)(Expected)
Data mining	First (1:1)
Embedded systems	Two One (2:1)
Distributed systems	Two One (2:1)
Computational science	First (1:1)

Sixth form equivalent - The Aga Khan High School – Mombasa, Kenya (2011 to 2015).

Subjects	Obtained Results
Computer studies	B
Physics	B-
Biology	B
Chemistry	B
English	B

Relevant Skills.

SQL, Python, C#, C++, Assembly Language, CSS, C, HTML, Pytorch, ASP.NET, Web API.

Projects portfolio.

Creation of a remote-controlled Sports timer using an Arduino: 21ST January 2019 to 20TH April 2019.

Using C language and Arduino's IDE, the goal of the project was to implement a remote-controlled sports timer with RFID capability which tracked runners at different checkpoints. Provided that, the runners checked in to the system using assigned contactless cards. This project was successfully implemented and the source code can be found on the linked GitHub page.

Creation of a Sports Management System software: 21ST March 2019 to 19TH June 2019.

Using SQL databases to store data retrieved from the software and implementation/design of the software created using C# and windows forms, I successfully created a Sports management system. The features of the software are to keep track of elements of managing and organizing staff, manage appointments booked by customers, and reporting faulty equipment.

Creation of a climate control system using PICF877A: 28TH Nov 2019 to Dec 13th, 2019.

Coded using a combination of C and Assembly language, a greenhouse climate control system was created using necessary drivers and makefiles. Several unit tests were made to ensure the device is performing as intended. Through this, I learned that embedded system devices revolve around logic, the persistence of code, and efficiency. It requires constant testing and full – proofing to ensure the logic flows and the system works and flows together as intended.

Determining patient risk via AI and data mining: 7th Nov 2019 to Jan 17th, 2020.

I used different AI models such as Decision trees and K-Means to train them on patient data in Python to classify a patient's health risk. I then conducted a critical evaluation to choose which model was most suitable and performed best in risk classification.

Creating a path-finding robot: 7th Jan 2020 to April 27th, 2020.

Using elements of machine vision and maze solving algorithms, I successfully assembled and created a pathfinding robot using a Raspberry Pi and a parallax activity board as hardware modules. The robot was able to successfully navigate all regions of a maze (the maze being tape aligned on the floor), to reach the exit point of the maze.

Distributed Systems Programming: 4th February 2020 to 21th April 2020.

Using elements of C#, ASP.NET, Web API and Cryptography, a distributed systems program was created as part of the Distributed Systems module. The program consisted of server-client communication and task distribution while ensuring information sent between the server and client is safely encrypted during transmission.

Combining Model-free reinforcement learning with Deep Learning: 10th April 2020 to 21st April 2020.

After much research, I came across the process of Deep-Q learning which combines both the aspect of Model-free reinforcement learning and deep learning. I successfully designed, built, and trained this model on a custom game. The overall result was this model performed better than its predecessor.

COVID-19 Open Research Dataset Challenge (CORD-19) by Kaggle: 25th April 2020 to Present.

Taking part in the CORD-19 research dataset challenge, I am currently in the process of visualizing data from research papers regarding the Coronavirus. Using toolkits such as NLTK for python and machine learning techniques, the goal is to visualize incubation periods of the disease and age variations using a graph.

References.

Available upon request.