# Kudzai Simau

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## PERSONAL INFORMATION

Date of Birth       :       28/08/94

Citizenship       :       Zimbabwean

Country of Residence       :       South Africa

Languages       :       English

Religion       :       Christian

**Personal Attributes**

I am hardworking young man willing to learn more and very passionate about technology. I am also a very enthusiastic person with a lot of entrepreneurship ideas particularly in the field of emerging technologies such as the block chain, IoT and machine learning. I love programming.

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## QUALIFICATIONS

Final Year Computer Engineering Student

## Education

- ➢ **Bsc Engineering (Computer Engineering) Jan 2014 – November 2018**
  University of KwaZulu /Natal (South Africa)

**Computer Engineering is the branch of engineering that integrates electronic engineering with computer sciences .Computer engineers design and develop computer systems and other technological devices.**

- ➢ **Advance Level (Cambridge)** Jan 2011 – Dec 2012
  Howard High School
  Mathematics       A
  Further Mathematics       D
  Physics       A
  Chemistry       B

- ➢ **Secondary Level (Zimsec/Cambridge)** Jan 2007 – Dec   2010
  Howard High School

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## WORK EXPERIENCE

University of Kwazulu /Natal    Aug 2016 — March 2018

**Applied Mathematics Tutor**

The duty of a tutor is to help freshman engineering students understand concepts that were introduced in class and by helping students through their tutorials.

## COMPUTER SKILLS
- ➢ Python
- ➢ Django
- ➢ C/C++
- ➢ Embedded C
- ➢ Assembly (AVR,PIC)
- ➢ JAVA
- ➢ JavaScript
- ➢ MATLAB
- ➢ HTML&CSS web development
- ➢ LINUX

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## Projects Worked On

- ➢ **Smart Lecture Using Digital and Analogue electronics(Computer Engineering Design 1)**

This was a project in which students in groups of 4 were required to design a smart lecture venue using analogue and digital components only without the use of a programmable devices. The project consisted of four units, switch mode power supply which was to power all the other devices, people counter unit which would count the number of people in the venue at a time and sound alarm if the number exceeded a certain threshold and lastly a temperature and light control unit which would turn the light to different intensities depending on the amount of illumination in the room and it would also switch on a heater or fan depending on the amount of heat in the room.

- ➢ **PIC micro controller Data Logger Using PIC assembly language(Computer Engineering Design 2 )**

In this project individual students were require to implement various embedded systems projects .I had to implement and embedded systems data logger using PIC16F690 microcontroller. All the software was written in assembly. The PIC16F690 microcontroller was interfaced with an LM35 temperature sensor, a humidity sensor, DS1307 RTC chip and an LCD the goal of this project was read temperature values and humidity values and log them into the EEPROM of the chip with a timestamp. The values were later retrieved using a push button and displayed on the LCD.

## ➢ C++ game programming using allegro(Computer Methods 3 project)

This was a project in which students in a group of 4 were called upon to design a C++ 2D game using allegro to gain experience with application of Object Oriented Programming. In this project Battlefield a popular 2D game was implemented.

## ➢ Home Automation Using Raspberry Pi(Computer Engineering Design 3)

This was a project in which that involved an amalgamation of programming skills from android programming, machine learning, network programming, embedded c and electronics. Students in a group of 4 were required to come engage with the community and use engineering skills to help solve some of the community problems. We had to work on a home automation system which allowed a home owner to control the devices in his home using an android application. The project also included a facial recognition gate access control.

## ➢ Smart Attendance Monitor (C++) (Software Engineering 2)

This was project in which students in group 4 were to implement a C++ Open CV based application that would be used to monitor the class attendance of student at the university and generate statics for each student which will be used to study student performance based on attendance. The application would use cameras mounted in each and every lecture venue to take photos of the class from different angles every 15 minutes. On the back-end, the program ran a simple script which would then extract faces from these images and then using facial recognition methods ran them across several faces for students registered for that course and then mark the register. The system was able to tell if a student was early, came late or absconded class.

## ➢ Online Book Store (Software Engineering 1)

This project was an online book store implemented in Visual Basic and ASP.Net.

## ➢ Autonomous Self Driving RC car(Computer Engineering Final Project)

This was a project which involved the use of machine learning methods in particular Deep learning methods to built an autonomous self driving robot car. This project illustrated the state of art technologies currently being implemented in self driving cars by building a low cost self-driving robot car by reverse engineering a radio controlled toy car to create our autonomous self driving robot car. The project involved mounting a microcomputer (Raspberry pi) on the robot and using other electronic methods so the microcomputer could control the wheels through an L293D motor driver chip. The microcomputer was also attached to a camera, an ultrasonic distance sensor and a two infrared sensors. The camera mounted on the robot acted as the eye in sense it would take images of the road ahead and stream them over the Internet to a remote TCP server setup on a remote computer .The remote server ran a mini Artificial Intelligence algorithm a  two layer pre-trained artificial neural network(implemented using Tensor-flow 2017 ported by Google) which would take as inputs pixels from the streamed image and output steering decisions .The steering decisions were then streamed back to client program on the microcomputer which would then use it control the wheels. All the software was written in python .This project took 4 weeks of research and 5 weeks of design and implementation it was the best project I have ever worked on.

## INTERESTS

- Travelling
- Cricket
- Video Games
- Table Tennis
- Swimming
- Soccer
- Programming

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## REFERENCES

Professor  Jules Tapamo, Professor of Computer Engineering UKZN Howard College
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 Advocate E.Bhero , Senior Lecturer UKZN Howard College Bhero@ukzn.ac.za