Samuel Mbiya

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🎓 Education

University of Cape Town   Feb. 2018 – Jun. 2022
BScEng Electrical and Computer Engineering   *Cape Town, South Africa*

> Focus areas of coursework - Embedded Systems, Signal Processing, Computer Science, Electronics
> Research project - *Evaluating the MIT S-band coffee can radar as an educational tool* (Supervisor: Dr Y. Abdul Gaffar)
> Activities & Societies - Developer's Society, Google Developer Student Club (DSC-UCT), Entrepreneur's Society and Crypto & AI Society

Lyttelton Manor Highschool   Jan. 2013 – Dec. 2017
National Senior Certificate   *Pretoria, South Africa*

> Activities & Societies - Rugby, Athletics, Photography and Representative Council of Learners (RCL) Committee

🥧 Skills

Personal Self-motivation, Problem solving and resourcefulness, Teamwork, Leadership, Communication, Fast-learner
Spoken Languages English (Fluent), French (Professional working proficiency)
Technical Programming - Python, Matlab, Java, Julia, C/C++, Verilog
Software development tools - Git, Github, VS Code, Jupyter Lab/Notebook, Linux CLI
Electronics - Soldering, Breadboard prototyping, Circuit design (with LTSpice), Microcontroller programming

⚙ Projects

University of Toronto   Aug. 2022 – present
Self-Driving Cars Specialisation   *Online/Coursera*

> This is an ongoing project that I've undertaken due to my interest in autonomous vehicles. The course is helping me develop skills and knowledge in Autonomous vehicle technology. The course covers an Introduction to Self-Driving Cars, State Estimation and Localisation for Self-Driving Cars, Visual Perception and Motion Planning

⚙ Work Experience

Council for Scientific and Industrial Research   Nov. 2022 – present
Graduate In Training   *Pretoria, South Africa*

> Working on Electronic Warfare Support Measures (ESM) research and software development in the Digital Electronic Warfare Research Group at the CSIR.

University of Cape Town   Feb. 2022 – Jun. 2022
Tutor: Electrical Engineering Design Principles (EEE3088F)   *Cape Town, South Africa*

> Involved marking tests, assignments and project submissions
> Involved mentoring 4 teams throughout their course project, which involved designing and fabricating an environment sensing expansion board (HAT) for the STM32 discovery board.
> Students were exposed to circuit board design using KiCAD 6.0 and collaborative tools for version control and documentation such as Git and Github

Council for Scientific and Industrial Research   Nov. 2021 – Feb. 2022
Vacation Work Student Intern   *Pretoria, South Africa*

> Worked in the Defense and Security Unit: Digital Electronic Warfare Research Group
> Involved benchmarking the performance of deep learning models for signal classification, using TensorFlow, PyTorch, MLJFLux and Flux
> Exposed to concepts in Machine Learning (Deep Learning) and Radar

Council for Scientific and Industrial Research

Vacation Work Student Intern

Jul 2021

Pretoria, South Africa

> Worked in the Defense and Security Unit: Digital Electronic Warfare Research Group
> Involved an investigation on the use of deep learning models for signal classification, using Julia and Julia ML packages, such as MLJFLux and Flux
> Exposed to concepts in Machine Learning (Deep Learning) and Radar

Council for Scientific and Industrial Research

Vacation Work Student Intern

Dec. 2019

Pretoria, South Africa

> Worked in the Defense and Security Unit: Digital Electronic Warfare Research Group
> Involved writing a script using Python and OpenCV for the segmentation and extraction of spectrogram images
> Exposed to concepts in Radar, Electronic Warfare and Computer Vision

Council for Scientific and Industrial Research

Vacation Work Student Intern

Jun. 2019 – Jul. 2019

Pretoria, South Africa

> Worked in the Next Gen. Enterprises and Institutions Unit: e-Government
> Involved working in a team on the design and development of workplace peer review web application using a modern web development stack and collaboration tools, such as ReactJS, SQL, Github and Trello
> Exposed to web development and agile software development; performed the role of scrum master, facilitating weekly stand-up meetings

⚙ Volunteer Experience

University of Cape Town

Faculty Mentor

Mar. 2021 – Dec. 2021

Cape Town, South Africa

> Part of the Dept. of Electrical Engineering First Years Mentorship Team
> Involved providing mentorship to a group of 3 first year Electrical Engineering students, through advice and resources to enable them to successfully navigate through their first year of engineering studies at university

Google Developers Student Club UCT

Technical Mentor

Oct. 2020 – Oct. 2021

Cape Town, South Africa

> Ideation and planning of hackathons, together with the Core DSC-UCT Commitee
> Providing technical support for DSC-UCT hosted hackathons
> Facilitated a progress report session, during the 2021 DSC-UCTxYOCO Hackathon

University of Cape Town

Residence Mentor

Oct. 2018 – Oct. 2019

Cape Town, South Africa

> Part of the 2019 Leo Marquard Hall Mentorship Team
> Helped incoming first year students, through advice and guidance to enable them to easily navigate through their first year of university

TeachOut

Logistics Coordinator

Oct. 2018 – May 2019

Cape Town, South Africa

> Communicated with teachers and educators to set up tutoring sessions at different schools and youth centres
> Organised transport for tutors to go to tutoring sessions

TeachOut

Tutor

Aug. 2018 – Oct. 2018

Cape Town, South Africa

> Tutored highschool learners, Maths and Science, in less underprivileged learning centres and schools in and around Phillipi community, in Cape Town, South Africa