

Tawanda Muzanhamo

ELECTRICAL & COMPUTER ENGINEER · SOFTWARE DEVELOPER



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tmuzanhamo



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"I am driven, calm under pressure, practical, and strive to always find the best solution to any problem. I am particularly interested in finding new and useful ways in which electronic technology can be incorporated into everyday situations to improve a product's performance and directly benefit the end-user. I am looking to create new and innovative systems, designed to seamlessly integrate useful technology into products and processes. My results have shown that I am focused, hardworking, and able to perform consistently, both under supervision and alone. This work ethic and skillset allow me to face any challenge head-on."

Education

University of Cape Town

Capetown, South Africa

BSC(ENG). ELECTRICAL AND COMPUTER ENGINEERING

Graduation: December 2020

- **Thesis Research Project:** Design of an algorithm for slice handover in 5G Networks
- **Specializations Include:** Software Development • Research • Mobile Broadband Networks • Algorithm Design
- **Coursework Includes:** Business Intelligence • Industrial Ecology • New Venture Planning • Next Generation Networks • Communication Systems Architecture • Engineering Mathematics and Physics • Object Oriented Programming (Java, C, Python, Assembly) • Professional Communication and Writing • Project Management • Embedded Systems • Digital Systems • High Performance Digital Embedded Systems • Microwave Engineering

Cape Peninsula University of Technology

Capetown, South Africa

ENGINEERING TRAINING

November 2018

- Received a certificate of Training in different engineering fields.
- **Technology Exposure:** Fitting and Turning • Soldering • Welding • CNC Programming • Metrology • Pneumatics • Electrical automation

Marondera High School

Harare, Zimbabwe

ZIMBABWE SECONDARY EXAMINATION COUNCIL(ZIMSEC)

Graduation: November 2014

- **Advanced Level:** Mathematics • Physics • Chemistry • English Language • **A Level (GPA 3.0/4.0)**
- **Ordinary Level:** Mathematics • Physics • Chemistry • Biology • Geography • History • Shona • English Literature • English Language • Integrated Science **O-Level (GPA 4.0)**

Experience

HWT Water Treatment

Mowbray, Capetown, South Africa

Python Developer (freelance)

May 2020 – July 2020

- Implemented new functions on the water logging app using Python Flask (Templating with Jinja 2).

Thinkst Canary

Observatory, Capetown, South Africa

INTERN SOFTWARE DEVELOPER

November 2019 – February 2020

- Design and Implementation of a hardware device that enables two Raspberry Pis to share an SD card.
- Helped improve the open source program used in the company and linked it to the slack channel.

Opti-Num Solutions

Rosebank, Johannesburg, South Africa

BUSINESS INTELLIGENCE INTERN

July 2019 – August 2019

- Trained on how to use MATLAB in Data Analysis.
- Assigned a business intelligence project and won first prize.

Citiq Prepaid

Greenpoint, Cape Town South Africa

SOFTWARE DEVELOPER INTERN

May. 2019 - July. 2019

- Developed a Restful API system using Python Falcon and SQL Alchemy.
- Built a frontend interface using Angular (TypeScript).
- Researched on how to best integrate the WhatsApp API from clickatel in the company.

Media Box

Westlake Cape Town, South Africa

FRONTEND DEVELOPER (part time)

March. 2019 – May 2019

- Part of a team that developed a Netflix Clone using React Native.

University of Electrical and Computer Engineering Department

University of Capetown, South Africa

ANALOG ELECTRONICS (EEE2045F) TUTOR

Feb. 2020 - Mar. 2020

- Responsible for helping students during the course practical.
- Conducting and leading theoretical problem-solving sessions.
- Invigilating tests, marking tests scripts and practical reports.

University of Electrical and Computer Engineering Department

University of Cape Town, South Africa

EMBEDED SYSTEMS (EEE3096S) TUTOR

July. 2019 - Nov. 2019

- Responsible for helping students during the course practical.
- Conducting and leading theoretical problem-solving sessions.
- Invigilating tests, marking tests scripts and practical reports.

Extracurricular Activity

Engineering and Built Environment (EBE)

University of Capetown, South Africa

MENTOR

Feb. 2018 - Nov. 2018

- Focused on helping first year engineering students transition smoothly from High School environment to University Environment.

Glendower Residence

University of Capetown, South Africa

MENTOR & COMPUTER SCIENCE (CSC 1015 AND 1016) TUTOR

Feb. 2017 – Nov 2017

- Worked closely with the Residence subcommittee to help first year students settle in the Residence as well as the university. This included assisting the students with their academics and social life.

Honors & Awards

ABSA Group Academic Scholarship (2018 and 2019)

ABSA

The ABSA group scholarship is awarded to undergraduate students who attain good grades (GPA > 65%), have a strong sense of social justice and display leadership skills.

Best Project (2019)

Opti-Num Solutions

The award was awarded to the group with the best Business Intelligence Project.

Technical Skills

Area(s) Of Interest

Software Development • Data Structures and Algorithms • Application Development • Web Development • Data Science • Artificial Intelligence • Internet of Things • Telecommunications • Cloud Computing • Cognitive Computing • Embedded Engineering • Electronics Engineering

Computing and Programming

- **Programming Languages**

Python, C, Java, MATLAB, JavaScript, Assembly

- **Frameworks and Databases**

Falcon, Flask, React, Django, MySQL, MongoDB, SQL Alchemy, Postgres SQL

- **Operating Systems**

Windows (XP, Vista, 7, 8, 10), Linux (Ubuntu)

- **Tools and Technologies**

Git, PyCharm, VS Code, IntelliJ IDEA, Cisco, Wireshark

- **Embedded Systems**

Raspberry Pi, Arduino, STM32 (F4 Discovery), Teensy Board (3.6)

Projects

This section introduces some of the projects I have taken developed over the years, some are still on going. Some are closely related to my university courses and other are purely for my own interests and enjoyment.

Algorithm for Slice handover in 5G Networks

TELECOMMUNICATIONS.

University of Capetown, South Africa

Feb. 2020 – June 2020

For my BSc (Eng.) Electrical and Computer Engineering I presented an algorithm for slice handover in 5G networks. The algorithm evaluates the new call and handoff call blocking and dropping probabilities.

D&F Lodge Booking Management System

WEB DEVELOPMENT.

Freelance

Dec 2019 -

I developed a full stack booking management system for the family business using React on the frontend and Python Flask on the backend. The web application is currently in use and hosted on Heroku.

S.H.A.M.I.S.O (<https://github.com/tmuzanenhamo/S.H.A.M.I.S.O-Virtual-Assistant>)

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING.

Personal Interest

Dec 2018 -

Developed a two-way communicating virtual assistant in Python. The project was developed for better usability and interactivity with my computer using voice commands.

Covid-19 Tracker (<https://tmuzanenhamo.github.io/Covid-19-Tracker/>)

WEB DEVELOPMENT.

World Health Organization

March. 2020

During the Covid-19 pandemic of 2020, I created a one-page web application that helps people track the statistics within their countries and the world at large.

I have also worked on numerous projects that can be viewed on my GitHub repository (<https://github.com/tmuzanenhamo>)

References

References are available upon request.