

Blessed M J Chihota

2876 Pheasant Cres, Chadcombe, Harare

+263 77 839 1860 | bchihota77@gmail.com | May 8th, 2000 | github.com/MunasheC | ID No: 63-2160177B43

Personal Profile

I'm a recent Mechatronics Engineering graduate (University of Cape Town) with a strong passion for problem solving using technologies within the realm of automation, IoT, machine learning and software engineering. I am proficient in software development, micro-controller programming, firmware development and high-performance embedded computing. Leveraging this, I've recently completed projects like an automated weight measuring system for wild life research and a cloud-based SCADA system that enables remote monitoring of process control data. Currently, I am collaborating on an AI battery management system that utilises an ESP-32 micro-controller for data processing. My aim is to drive innovation and solve complex challenges in the field of engineering.

Education

University of Cape Town

Cape Town, South Africa

BSc in Mechatronics Engineering

Jan 2020 - Dec 2023

- **Courses:** Process Control and Instrumentation, High Performance Embedded Systems, Engineering Systems Design, Mechatronics, Applied Engineering Mechanics, Project Management, Signals and Systems, Control Engineering

Zimbabwe Republic Police High School

Harare, Zimbabwe

High School

Jan 2013 - Dec 2018

- Passed Ordinary Level with 12 As out of 12 subjects
- Passed Advanced Level with 3 As out of 3 subjects
- Specialised in Physics, Maths and Computer Science at Advanced Level

Skills

Programming

Micro-controller programming (C and C++), Firmware development and management (for STM32 micro-controllers), Python, JavaScript & front-end web development, SQL.

Miscellaneous

Linux, Shell (Bash/Zsh), \LaTeX (Overleaf/R Markdown), KiCAD, Git.

Soft Skills

Time Management, Teamwork, Problem-solving, Documentation, Public Speaking.

Work Experience

Samancor Chrome ltd

Remote

freelance developer

Sep 2023 - Dec 2023

- Designing and creating a system to enable remote access of live data from the mine's on-site sensors
- Designing user-friendly interfaces for the data
- **Technical Skills:** PLC programming, C, Python, front-end web development
- **Soft Skills:** Problem solving, User interface design

Azoteq

Paarl, South Africa

Intern

Jun 2023 - Jul 2023

- Job shadowing the design process of micro-chip firmware and testing chip functionality
- Web Design of a dashboard for inverter-battery power system management
- **Technical Skills:** Python, C, C++, Firmware Management, JavaScript, HTML & CSS
- **Soft Skills:** Solution deck design and presentation, Professional communication and correspondence

Southern X Software Solutions

Sandton, South Africa

Intern

Dec 2021 - Jan 2022

- Job shadowing the design process of a pension fund administration system as a software solution
- **Technical Skills:** SQL, Python
- **Soft Skills:** Professional communication and correspondence

Projects

AI Battery Management System

University of Cape Town

Cape Town, South Africa

June 2023 - October 2023

- Designing and developing a battery impedance measuring device using an ESP32.
- Modelling lithium-ion battery degradation
- Formulating AI-based fault identification mechanisms for lithium-ion battery degradation
- **Technical Skills:** C and C++, Matlab, Python, TensorFlow, Git
- **Soft Skills:** Presentation skills, Problem solving using scientific method

Automated Bird Weight Measuring System

University of Cape Town

Cape Town, South Africa

Jan 2023 - May 2023

- Designing and building a scale that can automatically capture and log the weight of birds
- Addressing the needs of bird researchers for wildlife monitoring and conservation
- **Technical Skills:** C and C++, Firmware development, soldering
- **Soft Skills:** Presentation skills, Teamwork, Problem solving

Image-Steganography Decoder

University of Cape Town

Cape Town, South Africa

Jan 2023 - May 2023

- Programming an FPGA to decode messages hidden in images
- Gaining appreciation for the use of FPGAs as digital accelerators
- **Technical Skills:** Verilog, Python, Git
- **Soft Skills:** Presentation skills, Teamwork, Problem solving

Line-following robot

University of Cape Town

Cape Town, South Africa

Aug 2022 - Nov 2022

- Programming an arduino-nano using Matlab to make a turtle-bot follow black lines
- Gaining appreciation for the use of Matlab to design and develop complex robotic system
- **Technical Skills:** Matlab
- **Soft Skills:** Presentation skills, Teamwork, Problem solving

Light of Things 'LoT' Communication Network

University of Cape Town

Cape Town, South Africa

Sep 2022 - Nov 2022

- Creating a network that uses light signals for message transmission using STM32 Microcontrollers
- Analyzing the efficiency of light signals as a communication method
- **Technical Skills:** STM32 programming, Git
- **Soft Skills:** Teamwork, Presentation skills, Report writing

Enviro-sensor HAT (Hardware Attached on Top)

University of Cape Town

Cape Town, South Africa

Feb 2022 - Jun 2022

- Designing a PCB to monitor room occupancy and environmental conditions
- Addressing Covid-19 compliance needs for campus venues
- **Technical Skills:** PCB Design using KICAD, soldering, Git
- **Soft Skills:** Presentation skills, Teamwork, Problem solving

Interests

Community Engagement Recently involved in a digital literacy programme, by SHAWCO (UCT), for underprivileged communities.

Technopreneurship I love the different stories of how people creatively start businesses with technology.

Fitness and Football I am quite active and always up for a gym session. I love football. Both watching and playing it.

Languages

English Professional proficiency

Shona Native proficiency

French Casual proficiency

References

CEO of SouthernX (Gary Hughes) +27 83 326 0999

Electrical Engineering Department Administrator (Verona Langenhoven) verona.langenhoven@uct.ac.za

Human Resources at Azoteq (Nicolette Neethling) nicolette.neethling@azoteq.com

Samancor IoT System Project Manager (Mr S Mashalaba) ssmashalaba@gmail.com / +27 83 455 0772

2023 SHAWCO Education president (Amahle Gantsho) +27 71 278 1331