

# Samukelo Msimanga

COMPUTER ENGINEERING GRADUATE · ASPIRING ML ENGINEER



## About me

A Computer Engineering graduate who genuinely loves the process of turning a complex idea into a working project. My background ranges from low-level hardware tinkering to building AI agents with Python. I'm a problem-solver at heart, whether I'm debugging a circuit or optimising a neural network, and I'm eager to bring that energy to a professional team.

## Contact

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## Languages

English	Native
Zulu	Native
SeSotho	Basic

## Skills

- IT Troubleshooting
- Network Maintenance
- End-User Support
- Hardware Diagnostics
- Technical Writing
- Problem Solving
- Customer Service

## EDUCATION

- 2023 – 2025 **BEng Tech in Computer Engineering**  
CAPE PENINSULA UNIVERSITY OF TECHNOLOGY 📍 BELLVILLE, WESTERN CAPE, SOUTH AFRICA  
• Key Modules: Signal Processing, Computer Graphics, Network Systems & Embedded Systems  
• Final-year Project: Brain Computer Interface Using Non Invasive Electro-Encephalography
- 2018 – 2021 **National Senior Certificate**  
KHANYA LESEDI SPORTS SCHOOL OF SPECIALISATION 📍 RATANDA, GAUTENG, SOUTH AFRICA

## PROFESSIONAL EXPERIENCE

- 2024 – 2025 **Student Tutor – Computer Engineering Department**  
CAPE PENINSULA UNIVERSITY OF TECHNOLOGY 📍 BELLVILLE, WESTERN CAPE, SOUTH AFRICA  
• Assisted students with programming, electronics, and signal processing concepts.  
• Conducted lab sessions for Arduino and embedded systems practicals.

## PROJECTS

- 2024 **Pacman Game Implementation Using WebGL**  
CAPE PENINSULA UNIVERSITY OF TECHNOLOGY 📍 BELLVILLE, WESTERN CAPE, SOUTH AFRICA  
• Designed and implemented the classic Pacman game using WebGL for computer graphics rendering. [GitHub Link](#)
- 2025 **Brain-Computer Interface Neural Network**  
CAPE PENINSULA UNIVERSITY OF TECHNOLOGY 📍 BELLVILLE, WESTERN CAPE, SOUTH AFRICA  
• Developed a neural network pipeline to process EEG signals using Python and Julia. [GitHub Link](#)
- 2025 **SDN Network Controller**  
CAPE PENINSULA UNIVERSITY OF TECHNOLOGY 📍 BELLVILLE, WESTERN CAPE, SOUTH AFRICA  
• Designed a software-defined controller by integrating OpenDaylight (ODL) with GNS3 and VirtualBox.  
• Engineered dynamic routing logic using BGP and OSPF protocols to ensure efficient traffic management and network stability.  
• Developed a deep understanding of network virtualisation and automated traffic control. [GitHub Link](#)

## TECHNOLOGIES

### Python

APPLIED IN AI/ML AND DATA SCIENCE

- Built a [Video Downloader](#) using `yt-dlp` and `Flask` to scrape and serve multimedia from platforms like [Facebook](#), [X/Twitter](#), and [TikTok](#).

### JavaScript

APPLIED IN WEB DEVELOPMENT & GRAPHICS

- Applied `WebGL` for interactive graphics rendering in browser-based applications.

### C / C++

APPLIED IN EMBEDDED HARDWARE CONTROL SYSTEMS

- Programmed Arduino-based projects, including a solar-powered washing machine simulation.

### Java

APPLIED IN APPLICATION DEVELOPMENT

- Created a [Pong Game](#) with Java Swing for rendering and mechanics.

## REFERENCES

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### Dr Oluwaseyi Paul Babalola

CAPE PENINSULA UNIVERSITY OF TECHNOLOGY

📍 BELLVILLE, WESTERN CAPE, SOUTH AFRICA

- Contact: [babalolao@cput.ac.za](mailto:babalolao@cput.ac.za)

### Dr Mark Solomon Jacobs

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