

SAMUKELO GIFT MSIMANGA

Systems Engineer

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Pretoria, Gauteng

Profile

Computer Engineering graduate seeking an internship to develop practical experience in technical support, information systems, and software development. Familiar with Linux and Windows environments, with hands-on experience in scripting (Bash, Python), system administration, and application support. Strong problem-solver with a passion for emerging technologies, cybersecurity awareness, and digital transformation.

Work Experience

Research Assistant

CPUT SAQuTI, Bellville, Western Cape Feb 2026 – Present

- Developed automation scripts in Bash, Python, and Rust to streamline data collection, logging, and system monitoring.
- Configured and deployed Raspberry Pi systems for process control, sensor data acquisition, and remote monitoring.
- Maintained Linux-based systems and assisted with internal IT infrastructure and troubleshooting.
- Conducted research on quantum communication technologies and signal-processing methodologies.

Electronics Teaching Assistant

Cape Peninsula University of Technology, Bellville Feb 2024 – Nov 2025

- Assisted first-year students with technical concepts, lab equipment, and practical troubleshooting.
- Guided students in using diagnostic tools and provided one-on-one technical support.
- Diagnosed and repaired faulty lab equipment, ensuring reliable access to resources.
- Developed instructional materials and maintained organised documentation for lab procedures.

Education

Cape Peninsula University of Technology, Bellville, Western Cape 2026 – Present
BEng Tech Hons in Computer Engineering

Cape Peninsula University of Technology, Bellville, Western Cape 2023 – 2025
BEng Tech in Computer Engineering

Khanya-Lesedi Sports School of Specialisation, Ratanda, Gauteng 2018 – 2021
National Senior Certificate

Projects

Linux System Administration & Automation [Link](#)

- Developed a Bash-based utility for secure credential management on Unix/Linux systems, demonstrating cybersecurity awareness.
- Implemented file permission hardening, encrypted storage handling, and POSIX-compliant scripting.
- Automated routine system administration tasks to improve operational efficiency.

Python-Based Package Manager [Link](#)

- Built a lightweight package manager with parallelised fetching for faster software downloads.
- Implemented caching and file-locking mechanisms for safe and efficient package installations.
- Applied software development best practices including error handling and concurrent programming.

Network Configuration & SDN Integration [Link](#)

- Designed and deployed a multi-AS network topology in GNS3 with OSPF and BGP routing protocols.
- Integrated OpenDaylight SDN controller on Ubuntu Linux for centralised network management.
- Used Python to visualise and modify the network topology via the controller API.