Sello Phakoe

📍 69 Ulondolozo Street,
Mailula Park, Vosloorus

✉ u13238940@tuks.co.za 📱 (W) 071 628 5999   💼 in/sello-phakoe-8375b6107   ⌨ github.com/SelloP28

(H) 073 125 0723

PROFESSIONAL SUMMARY

A highly motivated student in Applied Mathematics & Computer Science with a background in Physics and Electrical Engineering. Passionate about applying software development, machine learning, and artificial intelligence to optimize photovoltaic (PV) systems and renewable energy solutions. Seeking entry-level software development roles in solar PV technology, focusing on data analysis, system modeling, and energy optimization tools.

TECHNICAL DATA SCIENCE & ML PROJECTS

Solar Panel Performance Prediction using Artificial Neural Networks (ANN) | Python, TensorFlow/Keras, Pandas, Matplotlib | [Live Demo]
Technical ML Project

• Developed a machine learning model in Python (**TensorFlow/Keras**) to predict Maximum Power Point Tracking (MPPT) voltage and power for solar panels based on environmental factors like irradiance and temperature.
• Performed data pre-processing with **StandardScaler** and utilized historical solar dataset for training, achieving accurate predictions for PV system efficiency.
• Created 3D visualizations using **Matplotlib** to illustrate power variations with voltage and temperature, providing insights for renewable energy software optimization.

Solar Energy Output Forecaster | Python, Streamlit, TensorFlow, APIs | [Live Demo]
Technical ML Project

• Built a web-based tool for predicting solar PV energy output using **ANN regression** and **Forecast.Solar API**.
• Features user inputs for location and panel parameters, with Matplotlib visualizations comparing ML and API forecasts.
• Deployed on **Streamlit Community Cloud**, showcasing full-stack development for renewable energy applications.

EXPERIENCE

Software Developer (Co-founder)
Moon Core Digital | August 2023 – March 2025 | Germiston

• Co-founded a tech start-up specializing in website development, 3D modeling, and digital marketing solutions.
• Involved in end-to-end project development, from client consultation to deployment, delivering custom digital solutions tailored to diverse industries.
• Managed a cross-functional team, fostering collaboration and ensuring high-quality deliverables within deadlines.
• Engineered scalable web applications using React and Node.js, providing users with seamless experiences.

Web Developer
Zosi Group | August 2023 - November 2023 | Alrode

• Collaborated on the design and development of **Zosi Group's** corporate website, enhancing its functionality and user experience.
• Implemented responsive web designs using HTML, CSS, and JavaScript, ensuring seamless performance across devices.
• Conducted rigorous testing and debugging to ensure a secure, user-friendly platform.

PROFESSIONAL DEVELOPMENT & CERTIFICATIONS

PROFESSIONAL DEVELOPMENT
Solar PV GreenCard Programme (Completed)
Nepoworx | June 2025 - July 2025 | Riversands
• Qualified in August 2025 with comprehensive training in solar PV system design, installations, component functionality (panels, inverters, batteries), and SHE (Safety, Health, and Environment) standards for solar projects.

CERTIFICATIONS
• Introduction to Machine Learning | Kaggle | 2025
• CS50: Introduction to Python Programming |Harvard Online | 2025

EDUCATION

Bachelor of Science - BSc Applied Mathematics and Computer Science (In-progress)
 University of South Africa (UNISA) | Expected Graduation: 2028 | Pretoria
Relevant coursework passed:
- Differential Equations (APM2611)
- Applied Dynamical Systems (APM2614)
- Multivariable Calculus (MAT2615)
- Applied Linear Algebra (APM1513)

N3 & N4: Electrical Engineering (Light Current)
Damelin - Boksburg Campus | 2013 | Boksburg
Subjects Taken:
- Electrotechnics   - Industrial Electronics
- Engineering Science   - Mathematics

Bachelor of Science - BSc in Physics (Incomplete)
 University of Pretoria | 2021 | Pretoria | Minor in Applied Mathematics
- Completed coursework in advanced mathematics, programming, and physics, demonstrating strong analytical and problem-solving skills.
- Achieved distinction in Mathematical Modeling (WTW152) with a 76% pass.
Relevant modules passed:
- Numerical Analysis (WTW123)
- Mathematical Modeling (WTW152)
- Imperative Programming (COS132)
- Waves, Thermodynamics & Modern Physics (PHY255)

Bachelor of Science - BSc in Physics & Mathematics
 BSc in Physics & Mathematics (Transferred) | North West University (Potchefstroom Campus) | 2018 | Achieved distinction in Introductory Algebra & Calculus (MTHS111) with 76%.
Matric
 Germiston High School | Germiston | 2012
Subjects Taken:
- English Home Language   Afrikaans First Additional Language   Life Orientation
- Mathematics   Physical Sciences
- Mechanical Technology   Information Technology

COURSEWORK

Introduction to Probability & Statistics - MIT-18.05
 MIT OpenCourseWare | 2025 | Probability & Statistics
Fundamentals of Photovoltaics – MIT-2.627 (In-Progress)
 MIT OpenCourseWare | 2025 | Photovoltaic System Design, Solar Cell Physics, Energy Conversion

SKILLS

Programming Languages: Python, C++, C#, R, Octave/Matlab
Data Science & ML: Pandas, NumPy, Scikit-learn, TensorFlow/Keras, Pytorch, Matplotlib, Kaggle, Jupyter Notebooks, Google Colab, Scipy
Web Development & Tools: Node.js, Django, React, Git/GitHub, HTML, CSS, JavaScript
Mathematical Expertise: Probability & Statistics, Calculus, Linear Algebra, Applied Mathematics, Differential Equations, Numerical Methods
Languages: English (fluent), Sesotho (Native), IsiZulu (Conversational), Afrikaans (Basic)
Soft Skills: Teamwork, Communication