

THEMBA MARTIN MTSHELWANE

Bachelor of Science (Hons) in Information Engineering

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SUMMARY

Information Engineering graduate with expertise in system design, signal processing, and circuit simulation. Proficient in leveraging computational tools to simulate real-world phenomena, applying mathematical and engineering rigor to solve complex challenges. Key projects include developing an aircraft fuel level measurement system and digitally modeling an ancient acoustic phenomenon. I excel at communicating complex technical concepts and have demonstrated a self-starter attitude through my experience as a software developer.

EDUCATION

Bachelor of Science (Hons) in Electrical Engineering

[University of the Witwatersrand](#)

📅 2023

📍 Braamfontein, Johannesburg

Main Courses:

- Electronics I and II
- Control Systems I and II
- Signals & Systems I and II
- Computational Mathematics and Engineering Mathematics I and II
- Software Development I, II and III
- Data and Information Management

WORK EXPERIENCE

Software Developer Intern

[Tshimologong - Digital Innovation Precinct.](#)

📅 July 2024 – Present

📍 Johannesburg

- Currently working as a front-end web developer, focusing on building responsive and dynamic websites using React and Tailwind CSS.
- Utilize engineering principles to optimise front-end design and improve code maintainability.
- Planning, managing and implementing front-end and full-stack web projects.

Freelance Web Developer

[University of the Witwatersrand](#)

📅 Feb 2023 - Feb 2024

📍 Online

- I independently developed and deployed full-stack applications, leveraging React, NextJS, Chakra UI, and Firebase for front-end and back-end solutions.
- I focused on UI/UX design and database management, enhancing user experience and operational efficiency.

Teaching Assistant

[University of the Witwatersrand](#)

📅 Sep 2023 - Nov 2023

📍 University of the Witwatersrand, Johannesburg

- I assisted, marked and evaluated student labs and projects. Labs and projects are written in C++ and use SFML and Doctest.
- I developed effective communication skills in conveying technical concepts to students.

PROJECT EXPERIENCE

Digital Acoustic Model

Investigation Project

📅 July 2023 - Nov 2023

📍 University of the Witwatersrand, Johannesburg

- My team digitally modelled the ancient acoustic phenomenon of the Temple of Kukulkan in Mexico, achieving 92% accuracy.
- My team researched and constructed a project plan for the project. This includes defining timelines and project costs.
- Implementing the project plan, time management and consulting with various stakeholders, from peers to supervisors and vendors.
- Successful collaboration in a small team.

Aircraft Fuel Measurement System

Measurement Systems

📅 Jul 2022 - Nov 2022

📍 University of the Witwatersrand, Johannesburg

- I designed a fuel level measurement system for a Skyhawk Piper Seneca fuel tank.
- The system measures fuel levels between 13 litres to 65 litres with a resolution of 1.22 litres/mV.cm and has a bandwidth of 1kHz.
- I demonstrated proficiency in system design, simulation, and analysis using tools like MultiSim online.
- The design was deemed viable.

SKILLS

Technical Skills:

- Engineering Tools: MultiSim, MATLAB and Simulink
- Programming languages: JavaScript, C++, Typescript and Python
- Version control: GitHub

. Soft Skills:

- Communication, Problem-solving, Adaptability, Time Management.
- Attention to Detail, Team Collaboration, Creativity, Critical Thinking.

REFERENCES

Katlego Molala

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Position: Supervisor

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