SAMUKELO MKHIZE

Luvisi Area, Nqutu, 3135 • 078 504 6753 • samukelomanager@gmail.com
LinkedIn • GitHub • Portfolio

SUMMARY

Computer Science Honours student at the University of KwaZulu-Natal with strong skills in AI, ML, and software engineering. Experienced in tutoring, academic research, and developing data-driven applications. Passionate about applying scalable, intelligent systems to solve real-world problems.

EDUCATION

Bachelor of Science Honours in Computer Science **Feb 2025 - present**
University of KwaZulu-Natal, Durban, South Africa

- Research: Water Pipeline Leak Prediction Using Deep Learning
- Advanced Coursework: Quantum Computing, IoT, ML, AI, Ontologies, Image Processing

Bachelor of Science in Computer Science & Information Technology **Mar 2021 - Dec 2024**
University of KwaZulu-Natal, Durban, South Africa

- Relevant coursework in Comp Sci and Information Systems

EXPERIENCE

Undergratuate Tutor, *University of KwaZulu-Natal, Durban, South Africa* **July 2023 - Present**

- Assisted undergraduate students in programming, data structures, and artificial intelligence, improving understanding and pass rates.
- Explained complex concepts such as finite automata, Turing machines, and algorithm efficiency in simplified terms.
- Designed structured lesson plans and provided one-on-one mentorship to guide students through assignments and exam preparation.

SKILLS

Languages: Python, Java, C#, C++
Software Development: OOP, Data Structures & Algorithms, Systems Analysis & Design, .NET, ASP.NET
Database: MySQL, Microsoft SQL Server, PostgreSQL (Azure)
Tools: Power BI, Git, Linux, Docker
Machine Learning & AI: TensorFlow, PyTorch, Scikit-Learn, NumPy, OpenCV, Pandas, Matplotlib, Seaborn
Web & Cloud: HTML, CSS, JavaScript, React, Microsoft Azure

PROJECTS

Honours Project - Water Pipeline Leak Prediction Using Deep Learning: Developed an LSTM/GRU-based model to predict pipeline leaks using Umgeni Water data for proactive water management.
Quiz Game: Built an interactive graphics-based quiz game in C++ as a third-year project, applying OOP and data structures.
Cloud Computing Ontology: Designed a semantic ontology in OWL 2 DL using Protégé to model cloud resources and services, enabling interoperability and automated reasoning.
Appointment Management System: Created a medical practice management system using .NET/ASP.NET with Power BI dashboards for appointment tracking and analytics.
Personal Chatbot: Implemented a retrieval-augmented chatbot with Python, LangChain, and Streamlit, trained on personal CV and documents to simulate interview Q&A.
Kids Study Web Platform: Developed an educational website with HTML, CSS, and JavaScript featuring interactive learning modules for children.
Mobile App: Built an Android mobile application in Android Studio with Java, focusing on user-friendly navigation and responsive design.