Thandokuhle Brian Msane

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SKILLS

Languages	Python, C/C++, Java
ML & Data Science	Scikit Learn, Tensorflow, Pytorch, Transformers, HuggingFace, LangChain
Web Development	HTML, CSS, JavaScript
Frameworks	FastAPI, REST API & HTTP, GraphQL, NodeJS, Express
Databases	PostgreSQL, MySQL, MongoDB, Vector Databases, MS Access
DevOps	CI/CD, Azure, AWS, Docker, Kubernetes, Github Action, SCRUM
Soft skills	Lead, Team player, Professionalism, Good communicator, Punctual
Important	Data Structures and algorithms, SOLID principles, SDLC, Modular Design

EXPERIENCE

IndabaX AI Club Eswatini	*Eswatini*	2022 - Present
President	Leader, Good Communicator, Punctuality, Team Player, Strategic Thinking	

- ✓ <u>Lead committee</u> and key decision making
- ✓ Present topical AI issues
- ✓ Organize events and ask for presenters in the AI and ML industry

Etihuku Technologies	*JHB, South Africa (Virtual)*	02 April 2024 – 31 Aug 2024
Intern Data Scientist	Tensorflow, Kubernetes, MongoDB, CI/CD, Azure, Docker, SCRUM	

- ✓ Developed Thola chatbot for reporting missing people in South Africa
- ✓ Developed Interactive dashboard and
- ✓ Worked on Eti-Intelligence projects like <u>violence detection, RAG, OCR</u>, etc
- ✓ Python <u>Backend Developer</u>

Nubi AI   *JHB, Cape Town, South Africa (Virtual)*   3 Sept 2024 – Dec 2024

AI Engineer   AutoGen, FastAPI, Vector Databases, AI Agents, AWS, Modular Design

- ✓ Backend <u>LLM development and Agentic Applications</u>
- ✓ Research on AI emerging trends
- ✓ Use Retrieval Augmented Generation Application<u>, RAG</u>, in Finance

CONFERENCES

[International Joint Conference on Artificial Intelligence](#)   *Macau, China*   19 -23 Aug - 2023

Being one of the very <u>few undergraduates</u> in this prestigious conference made me so proud. I was accepted for the **African Spotlight Session** where I presented about **Financial Inclusion in Africa**. I did <u>a study and applied ML algorithms</u> enhance the inclusion in Africa.

[CapeKR 2024](#)   *Cape Town, South Africa*   29 Jan– 02 Feb 2024

<u>Knowledge reasoning and representation</u> is one of the theoretical field of study in artificial intelligence. At this conference, I presented about the enhancement of LLMs with data that is presented in a knowledge graph. Got a ton of knowledge about KR from academia experts and fellow students.

Cyber9/12 Strategy 2024   *Cape Town, South Africa*   7-9 October 2024

<u>Cyber-security</u> is one of the most and recently well-known areas in computer science and IT so learning from the best is always precious. I, together with my team from our university, presented a <u>policy brief</u> in front of experts and got positive, constructive feedback.

IndabaX Eswatini Workshop   *Manzini, Eswatini*   2022, 2023, 2024

The local IndabaX, parented by the Deep Learning Indaba Consortium, plays a pivotal role in the <u>adoption of machine learning in Eswatini</u> and I always make it a point to avail myself to learn about AI issues and topics such as <u>Application of AI in Telecommunication, Natural Language Processing, and Explainable AI.</u>

COMPETITIONS MADE

Wild Fire Prediction   28 Aug – 30 Sept 2025

2nd Price Winner   Time Series, Regression, Exploratory Data Analysis, Fine-tuning

- ✓ This competition was about predicting wild fire in Zimbabwe and it disguised itself as a regression problem. The regression algorithms worked but with no optimal performance on metrics like root mean squared error so I had to use the time series aspect of it. This unlocked to potential of the problem and helped me climb up the leaderboard.

Google NLP Hack Series: Swahili Social Media Sentiment Analysis   27 July – 15 Sept 2023

3rd Price Winner

- ✓ What an amazing introduction to NLP, my favourite, by IndabaX Eswatini. The use of recurrent neural networks gained good results but the introduction of the transformer model by the paper "Attention is all you need: The transformer model" made a positive impact. During the time of time competition, I reviewed many NLP papers and learnt a lot form adapters, to transfer learning and so on.

PROJECTS

SiSwati NLP - Sentiment Analysis

Main Author and researcher   Pytorch, Academic writing, Research, NLP, Data collection & annotation

- ✓ Gathered data from YouTube comments on local channels for a representative dataset
- ✓ Data annotation with my colleague Philile Mthethwa
- ✓ Train machine and deep learning algorithms, fine-tune and optimize
- ✓ Write an academic paper under the supervision of Professor Hatem Haddad (presented in Deep Learning Indaba 2024)

Special Academe Services [Startup]

Chief Technology Officer   Lead**,** Python, Docker, HTML, CSS, JavaScript, NodeJS, Express.js, LLMs

- ✓ Oversee the design and implementation of the project
- ✓ Led the development team
- ✓ Communicate with technical and non-technical stakeholders
- ✓ Requirements gathering, elicitation, and anticipation

EDUCATION

University of Eswatini   November 2021 – Present

Bachelor of Science in Information Technology   Python, Java, C/C++, Algorithmic Thinking, Computer Science Fundamentals, Information Technology Concepts, Databases, Data Structures and Algorithms, Information Systems and SDLC