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

* Lead committee 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 violence detection, RAG, OCR, etc
* Python Backend Developer

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 LLM development and Agentic Applications
* Research on AI emerging trends
* Use Retrieval Augmented Generation Application, RAG, in Finance

**CONFERENCES**

[**International Joint Conference on Artificial Intelligence**](https://www.ijcai.org/) *Macau, China* 19 -23 Aug - 2023

Being one of the very few undergraduates 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 a study and applied ML algorithms enhance the inclusion in Africa.

[**CapeKR 2024**](https://cape-kr.org/) *Cape Town, South Africa* 29 Jan– 02 Feb 2024

Knowledge reasoning and representation 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

Cyber-security 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 policy brief 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 adoption of machine learning in Eswatini and I always make it a point to avail myself to learn about AI issues and topics such as Application of AI in Telecommunication, Natural Language Processing, and Explainable AI.

**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**](https://www.uneswa.ac.sz) 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