


TSHIMOLOGO MOLEFYANE

FIND ME ONLINE

 LinkedIn
linkedin.com/in/tshimologo

 GitHub
tshimologom.github.io

 Portfolio
tshimologom.webportfolio

SKILLS

Python • Scikit-learn • NumPy •
Pandas • PyTorch • Data analysis •
MatLab • Microsoft Office • SQL •
Time-series forecasting • Seaborn •
Data Visualization • TensorFlow

PUBLICATIONS

Forecasting of a Leading Country's Government Expenditure using a Recurrent Neural Network with a Gated Recurrent Unit

MDPI Mathematics

07/2023

This study uses a gated recurrent unit (GRU) neural network model to predict government expenditure. The GRU model was evaluated against 8 competing models like ARIMA and Bi-LSTM.

 <https://www.mdpi.com>

Junior Data Scientist

+27 829907718  tshimologo.molefyane@gmail.com  Pretoria, South Africa

SUMMARY

Junior data scientist with 3+ years of experience in research and project work. Capable of building models that fit the problem best with my skills in machine learning, statistics, problem solving, and python programming.

EXPERIENCE

Research Scientist & Lab assistant 09/2022 - 06/2023

NKUST

Taiwan

- Spearheaded 4 dataset preprocessing and visualization using matplotlib for key GDP indicators using normalization and sci-kit tools.
- Boosted results efficiency through sensitivity analysis tests, leading to reduced computation times and decreased model root mean square error rate to 0.15

Quantitative analyst intern

11/2019 - 02/2020

Nedbank

South Africa

- Fulfilled all analyst duties for one of the top 5 banks in the country.
- Collaborated on team projects that address banking challenges like credit risk using SAS programming to find leads and trends in data and customer behaviour.
- Presented models for the potential of AI in the banking sector, focusing on targeted product recommendations and dynamic fraud detection

EDUCATION

Electronic engineering and Computer science

01/2023

National Kaohsiung First University of Science and
Technology

Taiwan

- Specialized in machine learning using Python. Curriculum focused on data mining, and application of data analytics for the fintech and e-commerce sectors.

Mathematical Statistics

01/2019

University of Pretoria

South Africa

- Coursework focused on Statistics and probability, using conditional probabilities and Naive bayes theorem.

PROJECTS

Advancing economic forecasting using neural networks

02/2021 - 09/2022

Taiwan

Predicted GDP for the world's top 15 economies using advanced deep learning techniques.

- Designed multiple models such as a convolution neural network through unsupervised learning to forecast economic factors,
- Created a gated recurrent unit framework that outperformed 6 machine learning models with a heightened accuracy of 96% mean absolute error average

Africa's financial crisis prediction

09/2020 - 11/2020

Taiwan

Implemented classification models such as KNeighbour's and Decision Tree classifiers to identify the best predictor of banking crises

- Performed EDA and feature engineering for national exchange rate values to test the financial portfolio.
- Used logistics regression for classification of bank's decision management.
- Optimized results by generating a confusion matrix and an ROC curve and creating an accuracy hypothesis using precision, recall and f-1 scores.