

Thabang L. Mashinini

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Education

The University of the Witwatersrand

MSC IN COMPUTER SCIENCE

JHB, South Africa

2019 - Present

- **Learning Level Set Method by Echo State Network for Image Segmentation.**
- Working on finding computational cheaper techniques for training Recurrent neural networks.

The University of the Witwatersrand

BSC HONOURS IN COMPUTER SCIENCE

JHB, South Africa

2017

- **Wildfire Estimation Using Kernel Density Estimators.**
- Predicting wildfire occurrence in South Africa using unsupervised machine learning.

The University of the Witwatersrand

BSC IN COMPUTATIONAL AND APPLIED MATHEMATICS AND ASTRONOMY AND ASTROPHYSICS

JHB, South Africa

2014 - 2016

Experience

IBM Research

MACHINE LEARNING RESEARCH SCIENTIST INTERN

JHB, South Africa

Apr. 2020 - Present

- Using machine/deep learning and data-driven approaches on Petabytes of data for making long-range seasonal forecast of temperature and precipitation.
- Technical lead for the South African team in a international weather forecast project for a week.
- Integration and deployment of machine learning models into IBM PAIRS [🔗 \(IBM PAIRS\)](#)
- Involved in the initial development of the Covid-19 dashboard used by Gauteng.
- Assist with ad-hoc training, code reviews and tutorials as required for new team members.

Business Intelligence Service (University of the Witwatersrand)

DATA SCIENTIST INTERN

JHB, South Africa

Jun. 2018 - Apr. 2020

- Worked for a central unit for that organize information and make it available to management for the purpose of understanding, planning, managing and running the university and its processes.
- Implemented and deployed a course recommendation system for 1st year students.
- Reporting based on business requirements using SQL, SAP BO and OBIEE.
- Facilitation of workshops for teaching and training co-workers and vacation students in Data science.

CSIR

DATA SCIENTIST AND SOFTWARE ENGINEER INTERN

PTA, South Africa

Nov. 2017 - Jan. 2018

- Implemented machine learning models(SVM, PCA and Random Forest) to aid municipalities of South Africa to better measure their performance in terms of Service Delivery, Efficiency and youth employment.
- The system was deployed as a django web server to be used by municipal managers for the city of Cape Town.
- The project was mentioned on [🔗 Mail and Guardian](#), [CSIR](#) and [DST](#)

ZAR X

SYSTEM ANALYST AND SUPPORT INTERN

JHB, South Africa

Jun. 2017 - Oct. 2017

- Troubleshooting and testing of trading system. Modify and update system reports.

Skills

Programming

Python, MATLAB, R, C/C++, JavaScript, LaTeX, shell, SQL

Frameworks

PyTorch, TensorFlow, Scikit-learn, Spark, Reactjs, Git version control

Web

Django/Flask with Python, HTML5, CSS

Areas of Expertise

Signal Processing, Machine/Deep Learning, OOP, Software Engineering, Web Scraping, Data Processing/Engineering

Languages

English, SeSotho, Setswana, Sepedi, Isizulu

Publications

Long-Range Seasonal Forecasting of 2m-Temperature with Machine Learning

ETIENNE E. VOS, [THABANG MASHININI](#), ASHLEY GRITZMA, SIBUSISIWE MAKHANYA AND CAMPBELL WATSON

2020

- 34th Conference on Neural Information Processing Systems [NeurIPS 2020].
- [paper](#) [poster](#)

Mine Worker Threshold Shift Estimation via Optimization Algorithms for Deep Recurrent Neural Network

MILKA C.I.MADAHANA, JOHN E.D.EKORU, [THABANG L.MASHININI](#), OTIS T.C.NYANDORO

2019

- 18th IFAC Symposium on Control, Optimization and Automation in Mining, Mineral and Metal Processing [MMM 2019]
- [paper](#)

Noise Level Policy Advising System for Mine Workers

MILKA C.I.MADAHANA, JOHN E.D.EKORU, [THABANG L.MASHININI](#), OTIS T.C.NYANDORO

2019

- 18th IFAC Symposium on Control, Optimization and Automation in Mining, Mineral and Metal Processing [MMM 2019]
- [paper](#)

Selected Projects

Covid-19 Visual Analytic Tool

IBM RESEARCH

- The purpose of the tool is to provide citizens with accurate and up-to-date data on Covid-19 in Gauteng.
- [dashboard](#)

WITS Recommendation System

[THABANG L.MASHININI](#)

- 1st year course recommendation system for the faculty of Humanities.
- Private project, permission granted on request.
- [code](#)

Municipal Money and Youth Explorer

[THABANG MASHININI](#), ANRI SMITH, TEBOGO LEJAKA

- Machine learning system to aid municipalities of South Africa to better measure their performance in terms of Service Delivery, Efficiency and youth employment.
- [code](#) [slides](#)

News Classification

[THABANG L.MASHININI](#)

- Classification of news headline from websites using (NLP).
- [code](#) [video](#)

Honors & Awards

CERTIFICATES

- 2019 **Altron**, Power BI masterclass
- 2019 **Decision Inc**, SAP Web intelligence
- 2018 **Decision Inc**, SAP information design tool

SCHOLARSHIPS

- 2018-2019 **Masters**, Awarded the Bank Seta MSc Scholarship
- 2017 **Honors**, Awarded the National Research Foundation (NRF) Honours Grant Bursary
- 2019 **DST Conference grant**, Travel Award to attend Deep Learning Indaba

Nairobi, Kenya

COMMITTEES

- 2015-2017 **Wits Astronomy Club(WAC)**, Co-founder and Executive

References

- Dr. **Etienne Vos (Team Lead)**, Etienne.vos@ibm.com

IBM Research