

# Mitchell Phiri

MECHANICAL ENGINEER · PROGRAMMER

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*“Every living being is an engine geared to the wheelwork of the universe. Though seemingly affected only by its immediate surrounding, the sphere of external influence extends to infinite distance.”*

## Education

### University of Johannesburg

Johannesburg, South Africa

NATIONAL DIPLOMA IN MECHANICAL ENGINEERING

Feb. 2012 - Nov. 2012

- Did a Mechanical Engineering Diploma for one year due to space constraints on the Bachelor of Engineering Degree program

### University of Johannesburg

Johannesburg, South Africa

BACHELOR'S DEGREE WITH HONOURS IN MECHANICAL ENGINEERING

Feb. 2013 - Nov. 2018

- Design Project: Design of a water filter for use in the Desalination Process
- Research Project: Computer simulation of Diamond as a resilient material in a high radiation environment

### University of Johannesburg

Johannesburg, South Africa

MASTER OF PHILOSOPHY (MPhil) DEGREE IN MECHANICAL ENGINEERING

Jul. 2019 - Nov. 2020

- MPhil Thesis: Anomaly Detection in High Throughput Network Systems

## Skills

### Engineering Software

SolidWorks, ANSYS, Wolfram System Modeller, AutoCAD, Star CCM+, LAMMPS, Matlab, Mathematica, Material Studio, ReaxFF, VMD, Geant4

### Analysis Tools

Root, SRIM, Selenium, AIDA64

### Data Science & Machine Learning

Scikit-Learn, Python-Pandas, Seaborn, Matplotlib, Keras, OpenCV, Tensorflow

### Programming

Python, C, C++, Matlab, Mathematica, LaTeX

### Languages

English, Ndebele, Shona, Zulu

## Work Experience

### European Organisation for Nuclear Research (CERN)

Geneva, Switzerland

PROJECT ASSOCIATE WITH THE ATLAS TDAQ NETWORK ADMINISTRATION TEAM

Feb. 2019 - Apr. 2020

- Decommissioning of the old ATLAS Data Acquisition Network
- Installation and commissioning of the new ATLAS Data Acquisition Network
- Integration of the new network with Data Acquisition specific applications
- Development of tools for efficient monitoring of the high throughput network in real-time

### RC Physics Group / University of Johannesburg

Johannesburg, South Africa

RESEARCH ASSISTANT

Mar. 2018 - Present

- Developing a web scraping API
- Developing a gender/ethnicity classifier employing Convolutional Neural Networks
- Developing an API for data analysis and augmentation
- Giving tutorials on Python, Data Science, Machine Learning and Deep Learning
- Supervising an AIMS Student's project in Machine Learning/Deep Learning

## Honors & Awards

### INTERNATIONAL

Apr. 2014 **Best First Year Student for Physical Sciences in Chemistry 2013**, Physical Sciences Prestige Evening

University of  
Johannesburg,  
South Africa

### DOMESTIC

Sept 2010 **Best O'level Student 2009**, Prize Giving Day

*Gloag High School,  
Zimbabwe*

Sept 2011 **Best Lower Six Sciences Student 2010**, Prize Giving Day

*Gloag High School,  
Zimbabwe*

2012 **Best A'level Sciences Student 2011**, Prize Giving Day

*Gloag High School,  
Zimbabwe*

## MOOCs

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### Udemy

*Online Education*

STUDENT

*Nov. 2018 - Present*

- [Complete Python Bootcamp: Go from zero to hero](#) by Jose Portilla
- [Python for Data Science and Machine Learning](#) by Jose Portilla
- [Complete Guide to Tensorflow for Deep Learning with Python](#)
- Python 3: Deep Dive Series by Fred Baptiste
- The Complete Pandas Bootcamp: Master your Data by Alexander Hagmann
- Deep Learning: Advanced Computer Vision by Lazy Programmer

### Udacity

*Online Education*

STUDENT

*Apr. 2019 - Present*

- C++ Nanodegree
- Data Engineering Nanodegree
- Data Structures and Algorithms
- Machine Learning Engineer Nanodegree
- Deep Learning Nanodegree

## References

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### Professor Simon H Connell

Department of Mechanical Engineering Science  
University of Johannesburg  
Johannesburg, 2006

[Homepage](#)

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