


# Daniel Egbo

## Data Scientist

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Analytical Research Specialist with one year of experience in experimental and reproducible research in Astrophysics, Data Science and Machine learning. Created over 3000 new MeerKAT multi-wavelength catalog of stars from the recently launched MeerKAT telescope using cross-correlation methodologies, Bayesian statistics and python programming.



## Skills

- OS and Version Control: Linux, MacOS, Windows, Bash, Git
- Programming Language: Python, R
- Reproducible Research: Experiment Design, Literature Review, Data Collection, Open source, Report Generation
- Visualization: Matplotlib, Seaborn, Plotly, ggplot2
- Data Analysis: Numpy, Pandas, Scipy, Statsmodels, Tidyverse
- Machine Learning: Sklearn, Tensorflow, NLTK
- Web scraping: Request, Scrapy, BeautifulSoup, rvest
- Database: Postgresql, pgadmin4, MongoDB
- Containers: Docker
- Analysis Methods: Linear Regression, Multivariate Analysis
- Documentation: MS Office, Libre Office, Google docs, LaTeX



## Work History

### Research Scientist

*South African Astronomical Observatory, Cape Town, Western Cape*

- Researched on cross-correlation methodologies and statistical analysis of MeerKAT surveys with other waveband and discovered over 3000 optical counterparts.
- Used exploratory data analysis in studying, evaluating and summarizing 9 catalogs from virtual observatories.
- Combined 5 catalog data and implemented machine learning technique to classify optical transients.

2021-02 - Current

2020-09 - 2021-01

- Performed research duties per Professor request that yielded 3 research outputs.
- Employed reproducible research methodology and open source techniques to increase research group output by 15%.
- Collaborated with research group to plan, modify, execute and improve research techniques, procedures and outputs by 20% in 2021.
- Gathered, reviewed, and summarised 57 literatures from journals and produced over 30 graphs and other scientific calculations using Python.
- Participated in company meetings and events and made presentations on 3 occasions.
- Obtained quality data on 7 occasions for research group and maintained confidentiality of the data products.

## Machine Learning Intern

*Ubenwa Health, Enugu, Enugu*

- Performed signal processing, analysis of clinical data and improved prediction by 5%.
- Developed 7 advanced graphic visualization concepts to map and simplify analysis of heavily-numeric data and reports.
- Transformed raw data to conform to assumptions of machine learning algorithm and increased data quality by 7%.
- Researched, designed and implemented machine learning applications to solve problems affecting Infant kids with asphyxia infections and improved model accuracy from 87% to 92%.
- Maintained interpersonal communication in interactions, enriching team collaboration and customer relationships on Ubenwa project.
- Collaborated with 5 multi-disciplinary product development teams to identify performance improvement opportunities and integrate trained models.

2021-04 - Current



## Education

### Ph.D.: Astronomy

*University of Cape Town - Western Cape*

- Continuing education in Astronomy.
- Researching on astrophysical methods for identifying same objects detected in different wavelengths.
- Cleaned MeerKAT survey data and improved data quality by 20%.
- Received SAAO PhD Prize Scholarship.

### Master of Science: Astronomy

*University of Nigeria - Nsukka*

- Relevant Coursework Completed: Theoretical Physics & Computational Physics.
- Elected Student Representative of Physics Department.

2017-01 - 20192

20100 - 2014-08

- Member of Astronomical Society of Nigeria.
- Received the 2018 African-German Network of Excellence in Science Mobility Grant.

## Bachelor of Science: Physics & Astronomy

*University of Nigeria - Nsukka*

- Relevant Coursework Completed: Calculus & Statistical Physics.
- Emerged as top best 10% of the class.
- Led 5 team members to compete at the Business competition in India and came 7th out of 15.



## Certifications

2021-07

Scientific Computing & Python Programming, WorldQuant

2021-05

Introduction to Machine Learning, Kaggle

2021-07

Data Science Summer School, ESCAPE



## Award

- 2018 African-German Network of Excellence in Science Research Mobility Grant.
- 2020 SAAO Prize PhD Scholarship at University of Cape Town.