

Dunstan Matekenya, Ph.D.

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SUMMARY Seasoned Data Scientist with 14 years of experience of data work ranging from traditional statistics, such as managing household surveys at a national statistical office, to modern data science, e.g. enabling teams with machine learning and big data from social media and cellular carriers, and tools e.g. Python, SQL, etc.

JOB HISTORY

2017–Pres. Data Scientist at the World Bank Group, D.C., U.S.
2007–2017 Statistician at National Statistical Office, Malawi, Sub-Saharan Africa
2016–2016 Part-time Machine Learning Engineer at FiNC, Tokyo, Japan
2013–2016 Graduate Researcher, the University of Tokyo, Japan
2006–2007 High School Mathematics Teacher, Malawi, Sub-Saharan Africa

SKILLS

Soft	team building and leadership, stakeholder management, intercultural communication, diversity and inclusion, mentorship, empathy, presentation of quantitative results
Technical	survey design, survey sampling, experiment design, causal inference (e.g., diff-in-diff, synthetic controls), geospatial data analysis, building and evaluating machine learning models, data gathering, data access, project scoping, statistical analysis, technical training, project design, documentation, and monitoring
Expertise	household sample surveys, GIS/geospatial/mapping, carrier/cellular data
Platforms	Python, SQL, STATA, ArcGIS/QGIS, PostgreSQL, Azure Cloud/Databricks
Languages	English, Japanese (basic)

EDUCATION

The University of Tokyo, Japan 2016
Doctor of Philosophy with focus on Spatial Information Science

Curtin University, Australia 2011
Master of Science (Geospatial Information Science) with distinction

University of Malawi, Malawi 2006
Bachelor of Education (Mathematics)

WORK EXPERIENCE

The World Bank Group, Data Scientist, Washington, D.C. Mar 2017–Present

- Carry out ad hoc data science tasks using Python and SQL. For instance, build machine learning models to resolve missing data issue in a survey dataset, build a resilient web scraper to download and process debt documents from 84 countries, conduct statistical analysis to determine whether interventions had impact, lead satellite imagery annotation work and more
- Supervise work of a pool of vendors, mentor internal consultants
- Negotiate and liaise with stakeholders ranging from telecom tech leads to government bodies. For instance, negotiate responsible data access with telecom companies
- Own data science aspects of the work of World Bank Economists in various domains such as transport, health, economy, research. For instance, process and analyze big telecom data to provide recommendations on transport infrastructure

- Develop staff skills via data science training. For example, ramp up in Python and machine learning skills for research in global economic development
- Documentation and technical writing. Concept notes for fundraising, print publications, blogs

National Statistical Office, Statistician, Malawi

Jul 2007–2017

- Managed end-to-end national household surveys including sample design, project management, data processing, analysis, report writing, and dissemination.
- Led the GIS team to provide geospatial data services (e.g., map production) for all statistical work of the government.
- Developed geospatial data products using Python and SQL
- Managed team of 3 Junior Statisticians and 20+ Statistical Clerks, Cartography Assistants.
- Provided training. For instance, trained consumers on how to use our data products and hosted technical training on GIS and survey design.
- Built and managed a web-based geospatial data repository.
- Includes a 3.5 years study leave during Ph.D.

FiNC, Machine Learning Engineer, Japan

Aug 2016–Nov 2016

- Conducted literature review on image-based recommendation systems
- Built Computer Vision models using Python.

The University of Tokyo, Graduate Researcher, Japan

Apr 2013–Oct 2016

- Built machine learning models to predict individual mobility using mobile phone datasets
- Processed and analyzed GPS spatial datasets using Python and SQL (to access data in hive database).
- Setup a Hadoop cluster to store and process large mobile phone dataset
- Wrote academic papers

Salima Secondary School, Mathematics Teacher, Malawi

Oct 2006–Jun 2007

- Taught high school Mathematics and contributed to Maths curriculum development
- Mentored students

LEADERSHIP AND AWARDS

Full Tuition Ph.D. Scholarship from the Government of Japan

2013–2016

SELECT PUBLICATIONS AND PRESENTATIONS

- D. Matekenya et al. **Using Mobile Data to Understand Urban Mobility Patterns in Freetown, Sierra Leone. Policy Research Working Paper on COVID-19.** Washington, D.C.: World Bank Group.
- D. Matekenya, M. Ito, R. Shibasaki, K. Sezaki, "Enhancing Location Prediction with Big Data: Evidence from Dhaka". In Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing: Adjunct Publication (UbiComp '16)
- D. Matekenya, M. Ito, Y. Tobe, R. Shibasaki, and K. Sezaki, "MoveSense: A Spatio-Temporal Clustering Technique for Discovering Residence Change in Mobile Phone Data", ACM SIGSPATIAL International Workshop 2015, Seattle, WA, November '15
- D. Matekenya et al. "Communal Parameters: A Study into Using Community-wide Learned Prediction Models in Individual Users." Proceedings of the Second International Conference on IoT in Urban Space. 2016.

MISCELLANEA

- Lived and worked in Japan, Australia, the U.S., and a number of countries in Africa
- Enjoy spending free time with my family or visiting the gym
- Fascinated by the developments in artificial intelligence and space exploration