Martin Wachiye Wafula

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Professional Summary

DPhil candidate in Engineering Science at the University of Oxford in communication and information engineering with experience in research, teaching, and risk assurance, demonstrating a versatile skill set in technical problem-solving, mentoring, and project management. Seeking challenging opportunities to apply expertise in engineering research and education to drive innovation and support organizational growth.

Education

University of Oxford   *Jan 2020 – Present*
DPhil Engineering Science

- DPhil/ PhD Candidate researching on lossy compression of random graphs
- **Areas:** Information Theory, Graph Theory, Machine Learning

Jomo Kenyatta University of Agriculture and Technology   *Sep 2012 – May 2017*
BSc Telecommunication and Information Engineering

- First Class Honors

Experience

Part-time Lecturer   *Nairobi, Kenya*
Multimedia University of Kenya   *Sept 2024 – Present*

- Taught the following units: Wireless Communication Technologies, Signals and Systems, Digital Communication, Linear Algebra and Computer Programming II (Python)
- Integrated the emerging area of machine learning and AI in my classes to give students an edge in the modern practice of telecommunication engineering

Teaching Assistant and Senior Laboratory Demonstrator   *Oxford, UK*
University of Oxford   *Oct 2023 – Aug 2024*

- Provide comprehensive tutoring in Digital Communication Systems to undergraduate students
- Lead lab demonstrations, enhancing students' practical skills and theoretical understanding in semiconductor technologies, mark the lab reports and give feedback to students

Scholar Programs Facilitator (SPF)   *Oxford, UK*
Rhodes Trust   *Aug 2022 – Aug 2024*

- Led initiatives in Accessibility, fostering an inclusive environment for scholars.
- Part of the team in the Data Focussed Group that was aimed at leaveraging data to provide more insights on scholar experiences at Rhodes House
- Liaison between the Rhodes Trust and scholars, supporting program development and execution.

Laboratory Demonstrator   *Oxford, UK*
University of Oxford   *Oct 2020 – April 2023*

- Conducted lab demonstrations in Communications and Semiconductor labs for undergraduate students.
- Provided mentorship to students, guiding them through experimental techniques and data interpretation.

Associate (IT Risk Assurance)   *Nairobi, Kenya*
PricewaterhouseCoopers (PwC) Ltd   *Sep 2018 – Jan 2020*

- Conducted IT audits and risk assessments, enhancing clients' information security frameworks
- Prepared reports to be reviewed by senior associates and managers for presentation of audit outcomes to clients
- Mentored junior associates, improving team competency in IT governance and enterprise risk management

Intern   *Nairobi, Kenya*
Communications Authority of Kenya (CA)   *Jul 2018 – Sept 2018*
  ○ Assisted in frequency planning, licensing, and regulatory compliance monitoring
  ○ Gained experience in spectrum management and data management documentation

Intern   *Nairobi, Kenya*
Safaricom PLC   *Nov 2017 – Feb 2018*
  ○ Provided technical support in domain and email troubleshooting, and managed WiMAX systems for enterprise clients

Publications

On the Lossy Compression of Spatial Networks   2024

Vippathalla, P. K., **Wafula, M. W.**, Badiu, M. A., Coon, J.

2024 IEEE International Symposium on Information Theory (ISIT), Athens, Greece, 2024, pp. 416-421, doi: 10.1109/ISIT57864.2024.10619435. ↗

Rate-Distortion Function of the Stochastic Block Model   2023

Wafula, M. W., Vippathalla, P. K., Coon, J., Badiu, M. A.

57th Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, USA., doi: 10.1109/IEEECONF59524.2023.10476987. ↗

Technologies

Languages: Python, MATLAB

Technologies: Cisco Packet Tracer, Google Colab, PyTorch

Certifications

  ○ Certificate in Entrepreneurship and Innovation, Thunderbird School of Management, Arizona State University (Dec, 2023)
  ○ 5G Technology and Applications in Practice, International Telecommunication Union (Nov, 2020)
  ○ Digital and Wireless Communications (Online), University of Oxford (Nov, 2021)
  ○ Be Smart. Be Secure (FY19 PwC Network Training - English)
  ○ Introduction to ITGCs v3, PricewaterhouseCoopers

Affiliations and Leadership

Membership: Graduate student member of Institute of Electrical and Electronics Engineers (IEEE) - EEE Future Networks Initiative, IEEE Communication Society (ComSoc), IEEE Information Theory Society, and IEEE Signal Processing Society (SPS)

  ○ Representative for Electrical Engineering Graduate Students in the Graduate Joint Consultative Committee (GJCC) - Engineering Science Department, Oxford University (2020 -2024)
  ○ International Student Representative -Oriel College Middle Common Room, University of Oxford

Referees

Prof Justin P Coon
Professor of Engineering Science, University of Oxford (PhD Advisor)
✉ justin.coon@eng.ox.ac.uk

Prof Paul Stavrinou
Professor of Engineering Science, University of Oxford
✉ paul.stavrinou@lincoln.ox.ac.uk