

Kelvin Simatwo

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Profile

Second Year PhD student at Loughborough University researching computationally efficient algorithms for augmentative and alternative communication, benefitting individuals with speech disabilities. A strong team worker with excellent academic, communication and technical skills. Enjoys researching and working on AI projects that have a positive impact on society.

Education

Augmentative and Alternative Communication | PhD Loughborough University

📅 01/2023 - 12/2025

Thesis title: Computationally Efficient Embedded Classification Algorithms for Augmentative and Alternative Communication

Supervisors: Dr James Fleming and Dr Sijung Hu

Funding body (tuition fee): Wolfson School of Mechanical and Manufacturing Engineering

Data Science | MSc Loughborough University

📅 10/2021 - 10/2022

Grade: Distinction

Electrical and Electronic Engineering | BEng The University of Sheffield

📅 09/2018 - 06/2021

Grade: First Class Honours

Awards

📅 2020

Faculty Undergraduate Scholarship - The University of Sheffield

Recognition for sustained academic achievement during the second year.

📅 2019

Sir Harold West Award - The University of Sheffield

Recognition for academic excellence during the first year.

📅 2019

Northern Consortium UK Undergraduate Scholarship

Recognition for sustained academic achievement during the first year.

Publications

Simatwo, K., Elsahar, Y., Hu, S., Wade, W. and Fleming, J. Computationally Efficient Breath Pattern Recognition for Augmentative and Alternative Communication. IEEE Journal of Biomedical and Health Informatics. - Currently Under Review

Matthews, A.S., Simatwo, K., Narracott, A., Ambrogio, S., Walker, A. and Fenner, J.W., 2023. Quality Assuring a Ring Vortex Flow Phantom in Real-Time. Open Journal of Medical Imaging, 13(01), pp.11-29.

<https://www.scirp.org/journal/paperinformation?paperid=123507>

Publications

Data Study Group Team. (2023). Environmental Investigation Agency (EIA) Identifying Tiger Stripes with Machine Learning. The Alan Turing Institute.

<https://doi.org/10.5281/zenodo.10033690>

Industrial Experience

Turing Internship Network Data Science and AI Intern (Part-Time) The Alan Turing Institute

 01/2024 – 07/2024

- Working with The Alan Turing Institute's partner to solve their challenges involving data science and AI.
- Researching effective ways to enhance, classify and cluster noisy audio data, making use of available pretrained architectures.


Summer Research Placement Student (Full-Time) Insigneo Institute for in silico Medicine

 06/2021 – 08/2021

- Refined MATLAB code that governed the working of a ring-vortex complex flow phantom and integrated its encoder into an Arduino structure.
- Designed and constructed laser circuitry that measured the velocity of ring vortices to an accuracy of 98%.
- Refined Doppler probe MATLAB code that measured micro-flow velocity.
- Integrated the encoder, Doppler probe and laser circuitry into one workflow.
- Designed and 3D-printed casings to hold transducers and electronics.
- Created a user interface that simplified the operation of the entire workflow.

Academic Leadership Roles

Exam Invigilator Loughborough University

 06/2023

- Supervised exam candidates to ensure compliance with exam regulations.
- Distributed and collected exam materials.
- Monitored the exam room for any irregularities or misconduct.
- Assisted candidates with any queries or issues during the exam.
- Collaborated with other invigilators and exam administrators to ensure smooth conduct of exams.
- Reported any incidents or breaches of protocol to senior invigilator.


Academic Representative The University of Sheffield

 10/2020 – 06/2021

- Served as a liaison between students and faculty, conveying feedback, concerns, and suggestions.
- Organized forums to gather input from peers.
- Collaborated with faculty and administration to address student issues and implement improvements.
- Provided guidance and support to peers on academic matters and university policies.

Extra Curricular Activities

Data Study Group The Alan Turing Institute

 05/2023

- Worked in a team of 10 doctoral researchers and industry partners from The Environmental Investigation Agency to classify tigers based on their unique stripe patterns.
- Contributed to the exploratory data analysis and found a high class imbalance in the tiger image data. Recommended generating synthetic data as a solution.

Extra Curricular Activities

- Reviewed and tested the model pipeline. Compared results obtained with and without masking. Gained experience with PyTorch deep learning framework.
- Contributed to the writing of the final report and preparation of presentation slides.

Microsoft Embrace Hackathon Loughborough University

📅 04/2022

- Collaborated with 3 team members over 2 days to design a technology-focused solution for discrimination in sport and took first place in the hackathon.
- Designed a logic app using Microsoft Azure for tweet sentiment analysis in sports-related posts on Twitter.
- Further collaborated with my team and refined the logic app after the hackathon to detect hate speech in Twitter posts.

Innovation and Technology Enactus Sheffield

📅 02/2019 – 02/2021

- Provided technical support to Code Creators team and made Blackboard Collaborate software tutorials for lecture delivery.
- Won the 'Outstanding Contribution' award in July 2020.
- Was part of a team that won the 'Most Effective Team' award during the 2020 training weekend.
- Made sustainability checklists for teams in the Commercial Portfolio so that each team could work towards social, economic and environmental sustainability.
- Helped in designing and publishing the Enactus Sheffield website.

Key Skills

Leadership
Proficient

Problem Solving
Proficient

Communication
Proficient

Organization
Proficient

Self Management
Proficient

Research
Proficient