

EDUCATION

University of Oxford (2021-2025): DPhil in Engineering Science (Machine Learning)

- Selected for Centre for Doctoral Training in Autonomous Intelligent Machines and Systems (AIMS CDT), competitive PhD programme in AI and machine learning, funded by UKRI EPSRC.
- Specialising in graph ML/geometric deep learning; specifically graph rewiring, long-range interactions.

University of Oxford (2017-2021): MEng Engineering Science (Information Engineering)

- **First Class** with $\geq 82\%$ for Machine Vision, Robotics, Control and Mathematics modules.
- Final year dissertation in variational inference and Gaussian processes, scored 73%.
- Recipient of Academic Scholarship.

A-Levels (2017): A*A*A*A | GCSEs (2015): 10 A*s, 2As

RESEARCH AND INDUSTRY EXPERIENCE

Spring into Quant Finance, G-Research

Apr 2023

- Selected for competitive Spring Insights programme with training in ML, data science and finance; opportunities to network with senior researchers, and a summer internship fast-track opportunity.

HumBug Project, Machine Learning Research Group, Oxford

Jun–Aug 2020, Aug–Sep 2021

- Project using ML and neural networks (NNs) to detect and classify disease-carrying mosquito species from recordings of their ‘buzz’ taken on inexpensive smartphones in developing countries.
- Developed voice activity detection and removal system for recordings; tested convolutional NNs and Gaussian mixture models, achieving **97%** speech removal with 75% mosquito/noise preservation.
- Developed and tested benchmark models for mosquito audio dataset paper, accepted with oral presentation at NeurIPS 2021. Used Bayesian/residual NNs on time-series data, achieving ROC/PR AUC scores **0.93/0.9** for mosquito event detection and **92.7/71.6** for multi-species classification.

Intern, QinetiQ, Malvern

Jul–Sep 2018, Jun–Sep 2019

- Awarded student scholarship; undertook two internships in RF, Secure Networks and Comms.
- Worked with team developing Counter-UAV Radar system; completed projects in MATLAB including data analysis of calibration files to optimise calibration of a phased array radar.

OTHER EXPERIENCE

ML Project Leader, Engineers Without Borders Oxford

Sep 2020 – Jun 2021

- Led a team of ten in conducting a biomedical data analysis project, using ML techniques for identification of seizures and extracting biological information from noisy data.
- Also served as Director of Partnerships (Aug 2019 – Jul 2020).

STEP UP Ambassador, New College, Oxford Access & Outreach Dept.

Nov 2017 – Jun 2020

- State school ambassador; led tours of college, produced revision materials for Oxford entrance exam.

PUBLICATIONS & TALKS

Gutteridge, B., Dong, X., Bronstein, M., and Di Giovanni, F.: “DRew: Dynamically Rewired Message Passing with Delay” (2023). *International Conference on Machine Learning 2023*.

- Presented *DRew* paper at the Learning on Graphs and Geometry (LoGG) seminar series.

Sinka, M. E., Zilli, D., Li, Y., Kirkham, D., Wang, L., Chan, H., Rafique, W., Kiskin, I., **Gutteridge, B.**, Herreros-Moya, E., Portwood, H., Roberts, S. and Willis, K. J.: “HumBug – Introducing An Acoustic Mosquito Monitoring Tool” (2020). *Methods in Ecology and Evolution*.

Kiskin, I., Sinka, M., Cobb, A.D., Rafique, W., Wang, L., Zilli, D., **Gutteridge, B.** et al: “HumBugDB: A Large-scale Acoustic Mosquito Dataset” (2021). *Proceedings of the Neural Information Processing Systems Track on Datasets and Benchmarks*.