

## EDUCATION

### PhD in Information Engineering

University of Cambridge  
Started Oct 2019  
Expected completion date: Mar 2024  
Supervisor: Prof. José Miguel Hernández-Lobato  
ELLIS co-supervisor: Dr. Eric Nalisnick  
Advisor: Prof. Carl Edward Rasmussen

### MPhil in Advanced Computer Science

University of Cambridge  
Graduated with distinction Jul 2018  
Thesis: Unsupervised automatic dataset repair  
Supervisors: Prof. Zoubin Ghahramani & Dr. Christian Steinruecken

### Bachelor of Science in Electrical (Information) Engineering

University of the Witwatersrand  
Graduated with distinction Dec 2016

## SELECTED PUBLICATIONS

Metod Jazbec, **James Urquhart Allingham**, Dan Zhang, and Eric Nalisnick.

**Towards Anytime Classification in Early-Exit Architectures by Enforcing Conditional Monotonicity.** NeurIPS (2023). [arxiv.org/abs/2306.02652](https://arxiv.org/abs/2306.02652)

**James Urquhart Allingham\***, Jie Ren\*, Michael W Dusenberry, Xiuye Gu, Yin Cui, Dustin Tran, Jeremiah Zhe Liu, and Balaji Lakshminarayanan.

**A Simple Zero-shot Prompt Weighting Technique to Improve Prompt Ensembling in Text-Image Models.** ICML (2023). [arxiv.org/abs/2302.06235](https://arxiv.org/abs/2302.06235)

**James Urquhart Allingham**, Florian Wenzel, Zelda E Mariet, Basil Mustafa, Joan Puigcerver, Neil Houlsby, Ghassen Jerfel, Vincent Fortuin, Balaji Lakshminarayanan, Jasper Snoek, Dustin Tran, Carlos Riquelme Ruiz, and Rodolphe Jenatton.

**Sparse MoEs meet Efficient Ensembles.** TMLR (2022). [openreview.net/forum?id=i0ZM36d2qU](https://openreview.net/forum?id=i0ZM36d2qU)

Erik Daxberger, **James Urquhart Allingham\***, Eric Nalisnick\*, Javier Antorán\*, and José Miguel Hernández-Lobato.

**Bayesian Deep Learning via Subnetwork Inference.** ICML (2021). [arxiv.org/abs/2010.14689](https://arxiv.org/abs/2010.14689)

**James Urquhart Allingham\***, Javier Antorán\*, and José Miguel Hernández-Lobato.

**Depth Uncertainty in Neural Networks.** NeurIPS (2020). [arxiv.org/abs/2006.08437](https://arxiv.org/abs/2006.08437)

PyTorch code: [github.com/cambridge-mlg/DUN](https://github.com/cambridge-mlg/DUN)

*A full list of my papers can be found at [Google Scholar](#).*

## EXPERIENCE

### Google Brain

Aug 2022 – Nov 2022

Research intern with Jie Ren and Balaji Lakshminarayanan working on multimodal models, zero-shot classifiers, and prompt engineering, implemented in `Jax + Flax`. Resulted in an [ICML paper](#).

### Google Brain

Jun 2021 – Oct 2021

Research intern with Rodolphe Jenatton, Dustin Tran, and Carlos Riquelme working on reliable deep learning for large-scale Mixture-of-Expert models, in `Jax + Flax`. Resulted in a [TMLR paper](#).

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\*Equal contribution

**Wolfram Research** Aug 2018 – Oct 2019  
 Developer for the Wolfram Language ([Mathematica](#)) deep learning framework built on [MXNet](#). This included adding new layers, adding high-level features such as early stopping, revamping the training metrics functionality, and implementing the [ONNX](#) back-end (with contributions to [ONNX](#)).  
[reference.wolfram.com/language/ref/TrainingStoppingCriterion.html](https://reference.wolfram.com/language/ref/TrainingStoppingCriterion.html)  
[reference.wolfram.com/language/ref/TrainingProgressMeasurements.html](https://reference.wolfram.com/language/ref/TrainingProgressMeasurements.html)  
[reference.wolfram.com/language/ref/format/ONNX.html](https://reference.wolfram.com/language/ref/format/ONNX.html)

**Deep Learning Indaba** 2017 – present  
 Beta-tester and tutor for the practical sessions in 2017. Head tutor in 2018. Head of practicals in 2019. Prac lead in 2022 and 2023. In 2017-2019 we used [Python](#) with [TensorFlow](#), [NumPy](#), and [Matplotlib](#). In 2022 and 2023, we switched to [Jax](#) with [Haiku](#) and [Flax](#), respectively.  
[github.com/deep-learning-indaba/indaba-pracs-2019](https://github.com/deep-learning-indaba/indaba-pracs-2019)  
[github.com/deep-learning-indaba/indaba-pracs-2022](https://github.com/deep-learning-indaba/indaba-pracs-2022)

**Depth First Learning** Nov 2018 – May 2019  
 Developed a Depth First Learning curriculum, covering the Wasserstein GAN.  
[depthfirstlearning.com/2019/WassersteinGAN](https://depthfirstlearning.com/2019/WassersteinGAN)

**Deep Learning IndabaX – South Africa** Oct 2018 – Apr 2019  
 Member of the organizing committee. Responsible for website development (with [HTML](#), [CSS](#), and [JavaScript](#)), organizing the hackathon and managing the application process.

**Isazi Consulting** Dec 2015 – Sep 2017  
 Worked on various machine learning and data science projects involving [Python](#) (with [NumPy](#), [SciPy](#), [Matplotlib](#), [Pandas](#) & [Jupyter](#)), [R](#), and [C++](#) as well as [L<sup>A</sup>T<sub>E</sub>X](#), [Git](#), [SQL](#), and [AWS](#).

**ISC Student Cluster Competition** Jul 2015  
 Placed second in the 2015 ISC SCC representing South Africa. This competition centered around knowledge of [high-performance computing](#), [computer architecture](#), and [Linux](#).

AWARDS &  
HONOURS

**Outstanding Reviewer** Oct 2021, Jul 2022  
 Top 8% of reviewers for NeurIPS 2021. Top 10% of reviewers for ICML 2022.

**Qualcomm Innovation Fellowship Winner** May 2021  
 For “Diversity-encouraging Priors for Cheap but Well-calibrated Uncertainty in Deep Learning”.

**ELLIS PhD Studentship** Jan 2021  
 Accepted into the European Laboratory for Learning and Intelligent Systems PhD program.

**Michael E. Fisher Studentship in Machine Learning** Sep 2019  
 Awarded a full scholarship for a PhD in Machine Learning at Cambridge.

**Skye Cambridge Scholarship** Jun 2017  
 Awarded a full scholarship to read an MPhil in ACS at Cambridge.

**Deist-Sefor Prize** Dec 2016  
 For outstanding academic ability throughout my undergraduate degree.

**Entelect Prize** Dec 2016  
 Best fourth year information engineering student.

**Siemens Ltd Prize** Dec 2016  
 Best fourth year project report.

**CBI Electric Prize** May 2015  
 Best second year electrical and information engineering student.

**Actom Prize** May 2014  
 Best first year electrical and information engineering student .

**University of the Witwatersrand Dean’s List** 2014, 2015, 2016