

Bruno K. Mlodozeniec

AI Resident at Microsoft

University of Cambridge

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Education

University of Cambridge | Master of Engineering

2016-2020

Computer and Information Engineering

Emmanuel College

Performance

Year 1: 1st Class. Top 10% of class.

Year 2: 1st Class. Top 8% of class.

Year 3: 1st Class. Top 7% of class.

Year 4: 1st Class for Master's Thesis. Courses unclassified that year due to COVID-19.

Awarded Rowley Mainhood College Prize and Frank Marriott Scholarship for academic performance on exams.

Master's Thesis: Causal Inference: A Probabilistic Modelling Perspective supervised by Professor Richard Turner

Summary: We clarify and confront the ubiquitous claim that one *needs* to use a bespoke causal mathematical framework and language to do causal inference, and cast the concepts of causal inference in the language of probabilistic modelling familiar to the machine learning community.

Experience

Microsoft Research | AI Resident

Sep 2020 – Sep 2021

Cambridge, UK

- Applied Bayesian Optimisation and probabilistic modelling to improve the efficiency of biological experimentation in the lab.
- Collaborated with synthetic biologists to build a pipeline automating the laborious design and collection of experiments.
- Developed a novel Batch Bayesian Optimisation method that improves the effectiveness of Bayesian Optimisation in applications typical to synthetic biology.
- Currently working on improving compiler optimisation with Reinforcement Learning.

Apple | Machine Learning Engineering Intern | Siri

June 2019 – Sep 2019

Cambridge, UK

- Applied unsupervised learning methods for distributional shift detection for the Siri development pipeline.

University of Cambridge | Machine Intelligence Laboratory Intern

Aug 2018 – Sep 2018

Supervised by Professor Mark Gales

Cambridge, UK

- Benchmarked and investigated methods for efficiently obtaining measures of uncertainty in deep learning.
- Collaborated with the group on developing a novel method for training uncertainty-aware neural networks: [Ensemble Distribution Distillation](#).
- Continued working with the group after the internship to write a paper on our method, leading to a shared first-author publication at the International Conference on Learning Representations (ICLR) 2020.

Harvard University | Visual Computing Group Intern

July 2018 - Aug 2018

Cambridge, USA

- Investigated novel methods for analysing large networks of synaptic connectivity in a brain through motif discovery.

Cisco Systems | Machine Learning Intern

July 2017 – Sep 2017

Oslo, Norway

- Implemented and benchmarked deep learning architectures for a speech detection system at Cisco Webex.

Publications

2020

Andrey Malinin[†], Bruno Mlodozeniec[†], and Mark Gales. **Ensemble Distribution Distillation**. *International Conference on Learning Representations*. [[†] equal contributions first authors]

Honours & Awards

Royal Academy of Engineering | | Engineering Leaders Scholarship

2018

Royal Academy of Engineering, UK

- I was awarded a £5000 scholarship aimed at supporting engineering undergraduates with potential to become future leaders in their fields, and who are able to act as role models and inspire a future generation of engineers.

International Mathematical Olympiad (IMO) | | Honourable Mention

July 2015

Thailand

- I was invited to represent Norway at the International Mathematical Olympiad after ranking 6th and 3rd in the Norwegian olympiad.

Societies

2018 - 2020 **Founder,** [Cambridge University Artificial Intelligence Society](#)

University of Cambridge

- I co-founded, and chaired, the Cambridge University Artificial Intelligence Society – a student society dedicated to providing opportunities for collaboration on machine-learning projects.
- I started the society, organised a group of people passionate about its vision, and collaborated with them to organise talks and events that we felt were missing from the Cambridge extracurricular scene.

Technical skills

• Python

• TensorFlow

• PyTorch

• C++