Cian Eastwood

Edinburgh, United Kingdom

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Education

PhD Candidate in Machine Learning — *Sept 2018 - Current*
University of Edinburgh & Max Planck Institute for Intelligent Systems, Tübingen — *UK & Germany*

- Supervisors: Prof. Chris Williams and Prof. Bernhard Schölkopf.
- Research: Lies at the intersection of representation learning, causality and distribution shift, e.g. causal representation learning, out-of-distribution generalization, disentanglement and domain adaptation.
- Awards: Enlightenment Scholarship, NUI Travelling Doctoral Studentship.

MSc in Artificial Intelligence – Distinction (84%) — *Sept 2016 - Sept 2017*
University of Edinburgh — *UK*

- Thesis: Experiments with Information-Maximising Generative Adversarial Networks.
- Courses: Various courses in AI, e.g. probabilistic modelling and reasoning, pattern recognition and natural language processing.
- Awards: Best Thesis, The Informatics Scholarship, UK/EU Masters Scholarship.

Exchange Program — *Aug 2014 - Dec 2014*
University of Toronto — *Canada*

- Courses: Programming languages, computer networks, compilers, and formal methods of software design.

BSc in Computer Science – Graduated Top of Class (88%) — *Sept 2012 - June 2016*
National University of Ireland (NUI), Maynooth — *Ireland*

- Thesis: Minimising Volatility, Maximising Diversification.
- Courses: Broad range of courses in computer science and mathematics.
- Awards: Intel Medal—graduated top of class, STEM Scholarship, Entrance Scholarship.

Professional Experience

Research Intern (AI) — *Aug 2022 - Feb 2023*
Meta — *New York, USA*

- Led a project on contrastive learning through a causal lens. Signigicantly improved downstream performance.

Research Assistant — *Nov 2017 - Sept 2018*
University of Edinburgh — *Edinburgh, UK*

- Developed deep generative models for human motion synthesis. Collaborative research environment.

Tutor — *Sept 2018 - Jan 2022*
University of Edinburgh — *Edinburgh, UK*

- Delivered 10-to-15-student tutorials for Machine Learning & Pattern Recognition and Introduction to Machine Learning.

Intern Analyst — *Feb 2015 - Aug 2015*
Accenture — *Dublin, Ireland*

- Large-scale professional software development within an agile team. Developed features which affect millions annually.

Publications

[1] "DCI-ES: An Extended Disentanglement Framework with Connections to Identifiability"
C Eastwood*, A Nicolicioiu*, J von Kügelgen*, A Kekić, F Träuble, A Dittadi, B Schölkopf
11th International Conference on Learning Representations (ICLR 2023)

[2] "Probable Domain Generalization via Quantile Risk Minimization"
C Eastwood*, A Robey*, S Singh, J von Kügelgen, H Hassani, G J Pappas, B Schölkopf
36th Conference on Neural Information Processing Systems (NeurIPS 2022)

[3] "Align-Deform-Subtract: An Interventional Framework for Explaining Object Differences"
C Eastwood*, N Li*, C K I Williams
Workshop on Objects, Structure and Causality Workshop at ICLR 2022

[4] "On the DCI Framework for Evaluating Disentangled Representations: Extensions and Connections to Identifiability"
C Eastwood*, A Nicolicioiu*, J von Kügelgen*, A Kekić, F Träuble, A Dittadi, B Schölkopf
Workshop on Causal Representation Learning at UAI 2022

[5] "Source-Free Adaptation to Measurement Shift via Bottom-Up Feature Restoration"
C Eastwood*, I Mason*, C K I Williams, B Schölkopf
*10th International Conference on Learning Representations (ICLR 2022, **Spotlight**)*

[6] "Unit-Level Surprise in Neural Networks"
C Eastwood*, I Mason*, C K I Williams
*Workshop on "I Can't Believe it's Not Better" at NeurIPS 2021 (**Spotlight**, **Didactic Award**) and PMLR 163:33-40*

[7] "Learning Object-Centric Representations of Multi-Object Scenes from Multiple Views"
N Li*, **C Eastwood***, R Fisher
*34th Conference on Neural Information Processing Systems (NeurIPS 2020, **Spotlight**)*

[8] "A Framework for the Quantitative Evaluation of Disentangled Representations"
C Eastwood*, C K I Williams
6th International Conference on Learning Representations (ICLR 2018)

Awards

2022 NeurIPS Top Reviewer
2022 ICLR Highlighted Reviewer
2019 NUI Travelling Doctoral Studentship in Artificial Intelligence
2018 University of Edinburgh Enlightenment PhD Scholarship
2017 Informatics Dissertation Prize (Award for best thesis in the MSc Artificial Intelligence)
2016 Informatics Masters Scholarship
2016 UK/EU Masters Scholarship
2016 The Intel Medal (Award for best results in the BSc Computer Science)
2012 NUI Undergraduate STEM Scholarship
2012 NUI Undergraduate Entrance Scholarship
2012 600 points in The Leaving Certificate (Final secondary-school exams, 99.7th percentile nationally)

Invited Talks

[A] "Distribution shift and causal/disentangled representations"
Computational Intelligence, Vision, and Robotics Lab, New York University, December 2022

[B] "Probable domain generalization via quantile risk minimization"
Copenhagen Causality Lab, University of Copenhagen, November 2022 (virtual)

[C] "Shift happens: How can we best prepare?"
(Neuro)Science of Deep Learning Group, Massachusetts Institute of Technology, November 2022 (virtual)

[D] "Tackling distribution shift and out-of-disitribution generalization"
Seminar on Out-of-Distribution Generalization, Saarland University, November 2022 (virtual)

Reviewing

2023 ICLR, ICML
2022 ICLR, NeurIPS
2021 NeurIPS

Skills

Programming Python (PyTorch, Pandas, NumPy, Scikit-learn. etc.)
Miscellaneous Linux, Shell (Bash/Zsh), LaTeX, Git, Microsoft Office

References available upon request.