EOIN DELANEY, PHD

Assistant Professor in Information Systems and Machine Learning,
Trinity College Dublin, Ireland
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EMPLOYMENT

Assistant Professor, School of Computer Science and Statistics, Trinity College Dublin, March 2025 – Present

- Secured competitive funding from the Central Bank of Ireland and Insight Research Ireland Centre for a PhD Student in Machine Learning (€142,500) after one month
- Actively collaborating in research with the University of Oxford, Google DeepMind, The Central Bank of Ireland and the University of Antwerp
- Leading a Responsible Machine Learning research group (3 PhD & 8 MSc students).
- Module coordinator for Information Systems and Introduction to Management Science

Postdoctoral Researcher in AI, The University of Oxford, October 2023 – March 2025

- Developing novel software toolkits and methodologies for building and evaluating trustworthy, ethical and explainable artificial intelligence models with applications in healthcare and evaluating large language models (LLMs)
- Developer of the open source OxonFair AI fairness toolkit. Published both this and subsequent work on fair generative AI in NeurIPS (Premier AI Conference)
- Principal organizer of AI & Healthcare Workshop with St. Anne's College, Oxford and the Oxford Centre for Personalized Medicine in a collaboration involving world leading academics and industry experts
- Advisor for Meta AI London (Rathbone Square HQ) on Artificial Intelligence

EDUCATION

Ph.D., University College Dublin, Sep 2019 - Sep 2023

- Dissertation: *Post-Hoc, Contrastive, Explainable Artificial Intelligence for Time Series and Image Data.* (Examined by Prof. Eamonn Keogh)
- Best Application of AI in a Student Project – Irish **National Award Winner**.
- Collaboration with Industry (Accenture Labs Dublin, Tirlán)

BSc, Mathematics, Physics and Education, University College Dublin, 2015-2019

- First Class Award & UCD Entrance Scholarship Award

PUBLICATIONS – SELECTED (SEE GOOGLE SCHOLAR FOR FULL LIST)

- **Delaney, E**., Fu, Z., Wachter, S., Mittelstadt, B., and Russell, C., 2024. OxonFair: A Flexible Toolkit for Algorithmic Fairness. NeurIPS 2024. (**Core A* AI Conference, h5-index - 371**)
- **Delaney, E**., Pakrashi, A., Greene, D. and Keane, M.T., 2023. Counterfactual Explanations for Misclassified Images: How Human and Machine Explanations Differ. Elsevier Artificial Intelligence. **Top AI Journal (Impact Factor – 14.4)**

- Mayne, M., Kearns R.O., Yang, Y., Bean, A.M., Delaney, E., Russell, C., Mahdi A. LLMS Don't Know Their Own Decision Boundaries. Forthcoming In EMNLP 2025. **(Core A* Conference)**
- Keane M.T, Kenny E.M., **Delaney, E**. and Smyth B., 2021. If only we had better counterfactual explanations: five key deficits to rectify. In International Joint Conference on Artificial Intelligence **(Core A* Conference)**
- Kenny E.M., **Delaney, E**. and Keane, M.T., 2023. Advancing Post Hoc Case Based Explanation with Feature Highlighting. In International Joint Conference on Artificial Intelligence **(Core A* Conference)**
- **Delaney, E.,** Greene, D. and Keane, M.T., 2022. Forecasting for Sustainable Dairy Produce: Enhanced Long-Term, Milk-Supply Forecasting Using *k*-NN for Data Augmentation, with Prefactual Explanations for XAI. In *ICCBR-22.* ***Best Paper***
- **Delaney, E**., Greene, D. and Keane, M.T., 2021. Instance-based counterfactual explanations for time series classification. In *ICCBR-21*. ***Best Student Paper***
- **Delaney, E**., Greene, D. and Keane, M.T., 2021. Uncertainty estimation and out-of-distribution detection for counterfactual explanations: Pitfalls and solutions. In ICML-21 Workshop on Algorithmic Recourse

SKILLS

- **Software Engineering:** Python, Tensorflow, PyTorch, Sklearn, Tslearn, sktime, tkinter (extensive), LLM APIs, SQL, R
- **Deep Learning** and **Machine Learning** for eXplainable and Trustworthy AI
- **Human Testing of AI Systems:** Designing large scale human studies for evaluation of AI systems on Prolific
- **Science Outreach:** Podcast episode on counterfactual explanations in AI. Co-designed an educational website for children introducing probability and programming
- **Keynote Speaking:** Invited speaker at Imperial College London explainable AI Seminar series, Trinity College Dublin Reasoning and Imagination Lab, SFI Dreal Summer School, TCD School of Computer Science and Statistics Seminar Series
- **Seminar Series and Workshop Organization:** Organized workshop series at the University of Oxford and School Seminar Series at Trinity College Dublin
- **Securing Research Funding:** Research Ireland Insight Centre for Data Analytics and Central Bank of Ireland funding call (€142,500)

TEACHING & PROFESSIONAL SERVICE

- **Program Committee Member**
  - Neural Information Processing Systems (NeurIPS)
  - ACM Conference on AI Ethics and Society Conference (AIES)
  - Knowledge Discovery in Databases (ACM SIGKDD)
  - ACM Conference on Fairness, Accountability, and Transparency (FAccT)
  - Artificial Intelligence Journal (AIJ)

- **Principal Organizer**
  - Workshop on Accountability in Trustworthy AI at St. Anne's College Oxford
  - School of Computer Science Research Seminar Series

- **Teaching and Principal Supervision**

    - Student supervision at Trinity College Dublin & The University of Oxford
        - Zhengyu Su (PhD in Computer Science)
        - Patrick Kaiser (PhD in Computer Science)
        - Kiera Stempl (Visiting PhD student from University of Mainz)
        - Sofie Goethals (Visiting PhD at Oxford from University of Antwerp)
        - Janai Mintah (MSc in Social Data Science at The University of Oxford)
        - Leah Weldon (MSc in Computer Science at Trinity College Dublin)
        - Dylan Thompson (MSc in Computer Science at Trinity College Dublin)
        - Martha Ryan (MSc in Computer Science at Trinity College Dublin)
        - Anilia Anil (MSc in Computer Science at Trinity College Dublin)
        - Tudor Manea (BSc in Computer Science and Business at Trinity College Dublin)

- **Memberships and Affiliations**
    - Academic Collaborator at the Oxford Internet Institute
    - Associate Member of Exeter College Oxford
    - Member of the European Association of Algorithmic Fairness
    - Member of Association for Computing Machinery (ACM)

References

1. Professor Chris Russell
   Dieter Schwarz Professor of AI, Government and Policy
   Oxford Internet Institute
   University of Oxford
   chris.russell@oii.ox.ac.uk

2. Professor Mark T. Keane
   Chair of Computer Science
   University College Dublin
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3. Professor Derek Greene
   Associate Professor in Computer Science
   University College Dublin
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4. Professor Brent Mittelstadt
   Professor of Data Ethics and Policy
   Oxford Internet Institute
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