

# Dr. Thomas Finn

📞 07930855615 ✉️ [thomasjohnfinn1995@gmail.com](mailto:thomasjohnfinn1995@gmail.com) [🌐 LinkedIn](#) [🐙 GitHub](#) [📺 DataCamp](#)

## Research Career

### Durham University

Research Associate

Sep 2022 – Present

Durham, United Kingdom

- Presented research in random dynamics on networks to international experts at the 2023 UK Easter Probability Meeting and One World Probability Seminar, evidencing ability to communicate technical work with clarity.
- Coordinated workshop talks from experts to facilitate international collaboration and sharing of knowledge.
- Delivered accessible and informative colloquium to undergraduate audience to enthuse students about research.

### University of Bath

Research Associate

Oct 2021 – Aug 2022

Bath, United Kingdom

- Peer-reviewed publications in high-impact journals through exceptional research, writing and collaboration.
- Presented research at the 2022 Institute of Mathematical Statistics Meeting in London through an invited talk, highlighting international recognition of my work.

## Education

### University of Bath

Integrated Ph.D. in Mathematics at SAMBa

Oct 2017 - Sep 2021

Bath, United Kingdom

- Awarded full-time four-year studentship for statistical applied mathematics doctoral training program.
- Recipient of the Royal Statistical Society prize for the best Ph.D. thesis in applied probability defended between 2020-2022, demonstrating innovative and original mathematical research.
- Secured £2000 grant to support sixteen-month research visit to Università Roma Tre.
- Showcased research by students through organisation of fifteen talks at the 2019 SAMBa Summer Conference.

### University of Bath

Master in Mathematics - First Class Honours

Oct 2013 - Jul 2017

Bath, United Kingdom

- Academic excellence highlighted with £2000 grant from Institute of Mathematical Innovation to support ten-week summer research internship in theoretical computer science.
- Prepared and delivered weekly tutorials for undergraduate students in probability, statistics, and programming with over 95% positive feedback.

## Data Science and Machine Learning Experience

### AI Safety Research | *Strong interest in ensuring advances in AI have a positive impact*

- Collaborate in the SatisfIA research group to investigate aspiration-based reinforcement learning algorithms to address safety concerns raised through the traditional approach of maximising an objective function.
- Accepted on the competitive (1000+ applicants) BlueDot Impact Early 2024 AI alignment course to engage with AI experts and learn how to mitigate risk from AI systems with curriculum created by OpenAI and the University of Cambridge.

### Deep Learning Knowledge | *Experienced with Natural Language Processing and Computer Vision*

- Completed three-month NLP course by DeepLearning.AI with 91% grade implementing probabilistic, sequence and attention models in TensorFlow for sentiment analysis, named-entity recognition and translation tasks.
- Completed two-month Generative Adversarial Networks course by DeepLearning.AI with 97% grade building GANs in PyTorch for data augmentation, privacy preservation and image translation.
- Completed 15+ hour Generative AI with Large Language Models course by DeepLearning.AI and Amazon Web Services with 92% grade evaluating and fine-tuning LLMs, and aligning LLMs through reinforcement learning with human feedback.
- Successfully built a decoder transformer model to generate new place names in County Durham in PyTorch as a personal project.
- Achieved distinction in Master of Research during doctoral training program where I classified affiliation for Brazilian politicians through implementing clustering algorithms on voting data.

### Winton Climate Prediction Market Competition | *Applying machine learning techniques in a team*

- Led a team of academics from the University of Bath to a top-ten finish with a share of the £55,000 prize fund through novel application of machine learning models in climate prediction market competition.

### Industrial Collaboration | *Tackling problems in industry and governance with interdisciplinary mathematics*

- Participated in five week-long integrative think tanks during doctoral training program where I consulted with external partners to solve open-ended data-oriented problems with interdisciplinary mathematics.

## Technical Skills

**Programming:** Python (PyTorch, TensorFlow, NumPy, pandas, matplotlib, scikit-learn, seaborn), SQL, Git

**Machine Learning:** Supervised learning (regression, k-nearest neighbours, logistic regression, naive Bayes, support vector machines, decision trees), unsupervised learning (k-means clustering, hierarchical clustering, mixture models), dimensionality reduction (PCA, t-SNE), reinforcement learning (temporal difference, Q-learning, policy gradients, SARSA)

**Mathematics:** Probability, statistics, linear algebra, information theory