James Thornton

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Experience

Machine Learning Researcher, Rhodes Artificial Intelligence Lab (RAIL): January 2019 – September 2019
- Developed deep NLP models to assess online abuse, working with Google Jigsaw

Analyst, Financial Markets Advisory, BlackRock: 2016 – 2018
- Modelling and analytics role within the Markets & Analytics Group (MAG), focusing on data, modelling, and technical solutions across asset classes
- Projects include pricing, optimization and hedging; time-series modelling; building scalable data pipelines
- Role also included communicating methodology to senior clients, including CEO level

Summer Analyst, Portfolio Analytics Group, BlackRock: June – August 2015
- Valuation and Risk Assessment of structured products

Scholarship Summer Intern, UK&I Advisory, EY: 2012 – 2014
- Consultancy across Oil and Gas, Utilities and Actuarial

Education

University of Oxford, Computational Statistics and Machine Learning, DPhil (PhD): 2018 – Present
- Supervised by George Deligiannidis (Oxford) and Arnaud Doucet (Oxford/ Google DeepMind)
- Research on scalable inference, Optimal Transport and time-series, papers include:
  - Differentiable Particle Filtering (NeurIPS 2020, under review)
  - Quantized Variational Auto Encoders with Optimal Transport
  - Masked Bouncy Particle Sampler: A Parallel, Non-reversible MCMC Procedure

Warwick University, Master's in Statistics with Mathematics: 2015 – 2016
- Distinction
- Dissertation: Markov Chain Monte Carlo for Bayesian Non-Parametric Mixture Models (89%)

Warwick University, BSc Mathematics, Operational Research, Statistics and Economics: 2012 – 2015
- First Class Honours
- Academic Excellence Awards in each year

Hymers College: 2010 – 2012
- 5 A*s in A-levels: Mathematics (2 years early), Further Mathematics, Chemistry, Physics, Economics

Awards and Scholarships

- EPSRC and MRC Funded PhD 2018 – 2022
- Tukey Award for highest scoring Statistics Master's dissertation (89%) 2016
- Statistics Senior Scholarship 2015 – 2016
- Goldman Sachs Student Challenge Category Winner 2013 – 2014
- Karl Pearson Award for Top Exam Performance (91%) 2014
- EY Scholarship 2012 – 2015

Technical Experience

Programming languages: Python (including Tensorflow, PyTorch), R, C++
Platforms: BlackRock Aladdin, Bloomberg, AWS, GCP
Other: SQL, Unix, git

Teaching

Class Tutor, Department of Statistics, University of Oxford: January 2020 – May 2020
- 4th year undergraduate / MSc Advanced Simulation Methods

Teaching Assistant, Balliol College, University of Oxford: October 2019 – Present
- Introductory Calculus, Probability, Multivariable Calculus, Statistics and Data Analysis