

# Joe Benton

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## EDUCATION

### Department of Statistics, University of Oxford

Sep 2021 – Present

*DPhil in Statistics (Modern Statistics and Statistical Machine Learning CDT)*

First project: *Denoising Diffusion Models on Arbitrary State Spaces*, supervised by Arnaud Doucet, George Deligiannidis

Second project: *Infinite-width limits of neural networks*, supervised by François Caron

### Trinity College, University of Cambridge

Sep 2017 – Jun 2021

*BA with MMath in Mathematics*

Graduated with a Distinction (6th out of c. 250 in year)

Thesis title: *Activated Random Walks*, supervised by Perla Sousi

## WORK EXPERIENCE

### Research Assistant | *Center for Human-Compatible Artificial Intelligence, UC Berkeley*

Summer 2021

Built on the PAIRED algorithm for unsupervised environment design to incorporate human feedback with the aim of speeding up and simplifying the training process. Supervised by Michael Dennis.

### Research Assistant | *DPMMS, University of Cambridge*

Summer 2020

Adapted methods from algebraic geometry for the calculation of characteristic numbers to produce more direct computations of intersection numbers on the projective plane and torus. Supervised by Dhruv Ranganathan.

### Research Intern | *Charity Entrepreneurship*

Spring 2020

Collaborated to research and write two reports on potential global health and development interventions.

### Quantitative Trading Intern | *Jane Street Capital*

Summer 2019

Developed models in Python and Excel for predicting the price of depository receipts.

### Software Engineering Intern | *Metaswitch*

Summer 2018

Designed and built new features for their instant messaging servers' software.

## AWARDS

### Senior Scholarship, Trinity College

2018 – 2020

For exceptional first year exam results, reawarded after second year

### International Mathematics Olympiad

2014 – 2017

Gold, placing 7th out of 615 competitors in 2017 | Silver in 2014, 2015, 2016

### International Olympiad in Informatics

2015 – 2017

Gold, placing 6th out of 304 competitors in 2017 | Silver in 2015 | Bronze in 2016

### Romanian Masters in Mathematics

2015 – 2017

Three gold medals (2015, 2016, 2017), the best record in the history of the competition

## PROJECT EXPERIENCE

### AGI Safety Fundamentals Programme Lead | *Effective Altruism Oxford*

Mar 2022 – Present

Organised and facilitated the OxAI Safety Hub's AGI Safety Fundamentals programme for 30+ participants.

### National Coordinator | *Raise: A Celebration of Giving*

Jun 2020 – Present

Co-founder and national coordinator for a Raise, a student charity initiative that has raised over £380,000 for the Against Malaria Foundation. As of 2022, helping to coordinate 200+ student volunteers in seven universities across the UK.

### Chapter Founder | *One for the World*

Jul 2020 – Jul 2021

Founded the Cambridge chapter of the One for the World initiative, raising ~£5,000 in annual pledged donations.

## PUBLICATIONS

*A Continuous Time Framework for Discrete Denoising Models*. Andrew Campbell, Joe Benton, Valentin De Bortoli, Tom Rainforth, George Deligiannidis, Arnaud Doucet. arXiv preprint, arXiv:2205.14987