

# Karan Ruparell

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## Education:

**University of Oxford, MMath Mathematics and Statistics (1st/2:1 Expected) - 2019-2023**

- Exhibition Winner
- Integrated Masters with courses in Optimization, Machine Learning, and Numerical Analysis
- Currently taking 6 courses including Deep Learning, Statistical Machine Learning, and Network Theory
- Use Python, RStudio, Matlab, and LaTeX throughout my degree

**Robert Clack School, Dagenham - 2017-2019**

- A levels: 3 A\*s (Maths, Further Maths, and Physics) and an A in AS Religious Studies.

## Quantitative and Research Experience:

**Visiting Academic - University of Reading - January 2023**

- Worked under Rosalind Cornforth of the Walker Institute researching Neglected Tropical Diseases (NTDs)
- Focused on incorporating climatic and social dynamic data in modelling the spread of Onchocerciasis, and NTD
- Created a network simulation tool that models the spread of Onchocerciasis for policy making

**University Research Projects - October 2022 - Present**

- Dissertation on the suitability of Self Supervised Learning and Deep Mutual Learning with limited GPU usage
- 3 week project on Overparameterization and the true complexity of large neural networks
- 3 week project on Mean field theory and the role of solidifying friendships on social network segregation
- 3 Week project evaluating different models used in Onchocerciasis research, and how the field's needs will change

**Independent Researcher - FTX Future Fund Grant Receiver - July - September 2022**

- Self led AI Safety research using deep learning on different classification tasks in Pytorch
- Interviewed leading AI Safety researchers from organisations such as Open AI and Anthropic
- Ran discussion groups for other independent researchers to discuss articles and papers in the field

**Data Scientist - Included - September - October 2021**

- Modelled the effects of belonging to different marginalised groups on company inclusion using GLMs in R
- Close communication with consultants to make my methods fair across different demographics

**Summer Researcher - Oxford Mathematical Institute - July - August 2021**

- Produced potentially the first comparison of the rise of mathematics in Japan and India in the early 20th century
- Approached and consulted researchers, archival workers, and translators

**Junior Quantitative Analyst - Federated Hermes - July-August 2020**

- Explored unsupervised learning to provide a new way of classifying companies under ESG focused features
- Used my classification to better understand changes in company behaviour after the 2008 financial crisis

**Product Intern - Aberdeen Standard Investments - August 2018**

- Researched current and potential uses of AI such as robovisors and the company's use of AI in pooled funds

**Junior Quantitative Analyst - Federated Hermes - June 2018**

- Produced simple statistical models to predict company carbon emissions from privately listed companies

## Positions of Responsibility:

**Executive Committee - Effective Altruism Oxford - February 2022 - Present**

- Executive Committee member focusing on introducing collaborations with other societies and increasing diversity
- Presented on different types of diversity and my own framework for academic community segregation
- Organised an event with The Social Change Lab discussing the impact of climate protests
- Completed both the Introductory and In-depth fellowships on how to evaluate and compare areas to do good

**Events Leader - Google Development Student Club (GDSC) Oxford - October 2021 - June 2022**

- Collaborated with different universities to teach coding to individuals from underrepresented backgrounds
- Organised a World Cafe on how to use tech for social good with hosts from different organisations including the UN

**Staff Liaison Officer - Wadham College Student Union - July 2020-October 2021**

- Organised a virtual Staff Appreciation Day, Ask The Staff Q&As, and a Diwali celebration for staff and students
- Initiated dialogue with the executive staff that successfully convinced the college to become an Oxford Living Wage

## Interests and Achievements:

- **Intermediate language skills** - Native English speaker, fluent speaking and listening Gujarati
- **Rowallan Leadership Course** - Completed a 3-week leadership course that taught the fundamentals of teamwork and received a report evaluating my ability to communicate in a team as a leader and follower (September 2019)
- **Debating mentor and showcase debater** - Previously competed internationally. I have run virtual international World Cafes, debating training, and participated in showcase debates for companies (2019 - 2022)
- **Social engagement:** jointly produced 3 exhibitions and 2 books on local and historic discrimination (2016-2019)