

Alexander Roberts

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Profile

Oxford Mathematics PhD specialising in Combinatorics and Probability, with university teaching and industrial experience. Junior international bridge player and elite squash player.

Education

- **University of Oxford, Merton College**
PhD in Mathematics, Supervisor: Alex Scott. 2014–2018
Title: Topics in Extremal Graph Theory and Probabilistic Combinatorics.
My thesis consists of six academic papers spanning different areas of Combinatorics and Probability. Through this work, I spent time; learning new theory, undertaking independent research, collaborating with coauthors, and communicating my research through seminars.
- **University of Oxford, St. John's College**
Master of Mathematics, First class.
Bachelor of Arts in Mathematics, First class. 2010–2014
Throughout my undergraduate, I studied a range of Mathematical fields with a particular focus in the fields of Probability and Stochastic Processes, Stochastic Differential Equations, Financial Mathematics, Combinatorics, and Bayesian Statistics.

Employment in Academia

Research.....

- **University of Oxford, Mathematical Institute** **Oxford, United Kingdom**
Postdoctoral researcher under Prof. Peter Keevash August 2019–December 2020
In this research role concerning Combinatorics and Discrete Geometry, I got a chance to dive into a new area of Mathematics and to work with some heavier machinery. Pulling together various threads from different areas of Mathematics, my collaborators and I were able to develop new techniques and prove some classical problems.
- **University of Oxford, Statistics Department** **Oxford, United Kingdom**
Summer Research Student under Prof. Matthias Winkel August 2013–October 2013
In this 12 week research position, I studied scaling limits of population models with immigration in the field of Probability and Random Processes. This role involved immersing myself into a new area of Mathematics and, through collaboration, producing novel research in a short time span.

Teaching.....

- **University of Oxford, Merton College** **Oxford, United Kingdom**
Stipendiary Lecturer October 2014–September 2020
In this teaching role, I organised and taught small-group tutorials for first and second year undergraduates in a wide range of Mathematics courses. This involved interviewing prospective undergraduate students, explaining complex Mathematical concepts in a 2-on-1 setting, and marking students' work.

- **University of Oxford, Mathematical Institute** **Oxford, United Kingdom**
Teaching Assistant/Class Tutor *October 2014–March 2015*
As part of my PhD, I acted as a Tutor for a range of final year Bachelor and Masters level Mathematics courses. This role involved marking students' work and giving classes for up to 12 students at a time.

Employment in Industry

- **Selex-ES (now Leonardo)** **Luton, United Kingdom**
Systems Engineer *July 2014–September 2014*
In an internship working in the Systems Engineering department of SELEX-ES, I carried out research into Stochastic Differential Equations and Probabilistic Filters, and their applications in the defence industry (e.g. radar tracking). This work involved running simulations in Matlab, discussing potential ideas with colleagues, and writing reports on my findings.
- **Viacom International Media Networks** **London, United Kingdom**
Market Data Analyst Intern *September 2011*
In a short internship in the advertising department of MTV, I worked on the marketplace interface, developing and implementing a product mapping algorithm. This work involved handling and combining various data sets, and working in VBA for Excel.

Other ventures

- Learning Danish
 - I started attending language classes at the Amager Vestegnens Sprog- og Kompetencecenter in September 2020. I currently attend classes (virtually) three days a week, following the Danskuddannelse 3 program.
- Bridge
 - I am a competitive bridge player, having represented England internationally as a junior. Highlights include:
 - Selection for the England junior national team in three European championships and two World championships.
 - England junior champion 2017.
 - Austrian champion 2017.
 - I am also a bridge coach and teacher, coaching the England junior team and teaching at bridge camps run for children.
- Sport
 - I am an avid sportsperson with my main sport being squash. While a student, I played for Oxford University throughout my time there, captaining the first team in the last year of my PhD, and I also represented my county. Since coming to Copenhagen, I have played for KSK in the elite division.
 - Besides squash, I love very very long runs and hope to one day manage 100 miles in 24 hours.