Alexander Milner

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Degrees

PhD at Edinburgh University
School of Mathematics   September 2024 - July 2028

- Working with supervisor Dr Dimitra Kosta on a fully-funded studentship from the School of Mathematics.
- Taking graduate level courses run by the Scottish Mathematical Sciences Training Centre (SMSTC) including:
  - Algebraic Geometry, Algebraic Topology, Modern Regression, Bayesian and Simulation Methods

MMath Master of Mathematics at Durham University
Department of Mathematical Sciences   September 2020 - July 2024

- Exam average of 92% with 92% in dissertation.
- **Prizes awarded:** Best exam results out of Durham Mathematics cohort in 2nd/3rd/4th years and best overall degree, winning the Margaret Millington award at graudation ceremony.

International Baccalaureate at Kings College School, Wimbledon   September 2009 - July 2020

- Scored 44/45 and 7's in all Higher levels; Mathematics, Physics and Chemistry.

Research Experience

Research project funded by London Mathematical Society Undergraduate Research Bursary

- Under supervision of Dr Jack Shotton, studied the density of primes such that the $\mathbb{F}_p$-rational group of points on an elliptic curve without complex multiplication has full j-torsion.
- Currently writing up paper to be submitted to the *Involve* journal in due course.

Masters Dissertation

- Under supervision of Dr Dan Evans, investigated applications of the Polynomial Method to Combinatorics.
- Extended results by Kezdy and Snevily and used the findings to prove a new result classifying when elements in a matrix can be rearranged to make said matrix invertible using commutative algebra.

Events attended

- Computational Algebraic Geometry Workshop in Durham (18-22 November 2024)
- Glasgow Edinburgh Algebra Research Student (GEARS) seminar meeting in Glasgow (17 October 2024)
- Scottish Mathematical Sciences Training Centre (SMSTC) 2024 Symposium in Perth (2-3 October 2024)
- UK Applied Algebra and Geometry Network Meeting in Edinburgh (11-12 July 2024)
- ECRM: Early Career Research in Mathematics (11-14 July 2023)
- Durham Symposium 2023: Spectral Gaps (7-11 August 2023)

Teaching Experience

University Tutorials

- Ran workshops for Fundamentals of Pure Maths and Introduction to Number Theory courses as well as marking assignments at Edinburgh University.
- Taught weekly Calculus tutorials and marked first year assignments at Durham University.

Mathematics competitions

- Competed in 2023 Simon Marais Competition, coming 7th in the Pairs Division winning A$1600.
- Competed in 2022 Simon Marais Competition, coming 9th in the Pairs Division winning A$800.

Other skills and interests

- High level of proficiency with Python, Javascript, SageMath and Macaulay2.
- Keen conductor, violinist, pianist and organist, currently conducting Edinburgh University Sinfonia, having conducted the Durham University Symphony Orchestra from 2021-2024.