WILLIAM FORD

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Phone: +44 7580 666570
Born: 22nd May 2002, Penrith, Northern England
Nationality: British
Languages: English (Native), French (B2), German (A2)

PROFILE

M2 Optimisation IP Paris PhD track student supported by a Sophie Germain scholarship from the Fondation Mathématique Jacques Hadamard. Before this I completed a BSc and MSc at Durham University (UK), where I received the Winton and Norton Prizes for the highest ranked MSc mathematics student and performance in my first year respectively. Research interests in Optimal Transport, Calculus of Variations, PDE, and applications.

EDUCATION

IP Paris PhD track/Paris-Saclay M2 Optimisation: TBD/20 (currently 17.9/20) *2024 – 2025*

M2 in theoretical optimisation (stochastic opt. , convex & nonsmooth analysis and opt., game theory) and links to PDEs (Calculus of variations, Elliptic PDE, opt. transport, opt. ctrl. , geometric ctrl., eigenfuncts. of the Laplacian).

Research Internship: *Quantitative Stability in Optimal Transport, CMAP Polytechnique.* *April – August 2025*

Supervisors*: Dr Michael Goldman, CMAP Polytechnique & Dr Cyril Letrouit, LMO Orsay.*

Durham University MSc Mathematics: First Class – 88/100 (ranked 1st out of 25) *2023 – 2024*

1 year master specialising in analysis and probability (functional analysis, PDEs, stochastic analysis, ergodic theory). Received first class marks (trés bien) in all modules, and the Winton prize for highest ranked student.

Research Dissertation: *"Partial Regularity for Optimal Transport Maps Between Uniform Measures"* (86/100)
On using the Benamou-Brenier formulation of OT to construct a competitor for the optimal map between uniform measures, allowing the development of a variational approach to local regularity via Campanato theory.

Supervisor: *Dr Alpár Mészáros, Durham University.*

Durham University BSc Mathematics: First Class – 82/100 (ranked 7th out of 129) *2020 – 2023*

3 year BSc covering a range of topics in fundamental and applied mathematics. Received first class (trés bien) marks in all modules taken and received the Norton Prize in 2021 for outstanding performance.

Research Dissertation: *"Normal Families in Complex Analysis"* (79/100)
On compactness criteria in various function spaces, and their applications in proving results in complex analysis (Great Picard theorem) and in holomorphic dynamics.

Supervisor: *Dr Wilhelm Klingenberg, Durham University.*

Queen Elizabeth Grammar School Penrith *2013 – 2020*

A levels: Maths (A*), Further Maths (A*), Physics (A*)
GCSEs: 12 GCSEs including Further Maths (A**), Maths & Physics (9)

AWARDS AND SCHOLARSHIPS

2024 Sophie Germain M2 Excellence Scholarship, Fondation Mathématique Jacques Hadamard.
2024 PhD track full package M2 + PhD scholarship, Institut Polytechnique de Paris.
2024 Winton MSc Memorial Prize for highest scoring student in Mathematics, Durham University.
2021 Norton Prize for performance in science, St Cuthbert's Society, Durham University.

TEACHING EXPERIENCE

Undergraduate Tutor and Teaching Assistant | Durham University *2023 – 2024*

Lead weekly tutorials (small group problem solving classes) for two classes of 13 Calculus I students, as well as marking biweekly assignments for 7 Linear Algebra/Calculus tutorial groups.

Mathematics Tutor | MyTutor.co.uk *2021 – 2023*

Tutored struggling GCSE and A-level maths students in both 3 to 1 and 1 to 1 settings, helping develop students problem solving skills and confidence approaching unseen material.