

Oliver Daisey

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EDUCATION

Durham University

Ph.D. Mathematics

Durham, UK

October 2021 - Present

University of Birmingham

MSc Cybersecurity, high distinction

Birmingham, UK

September 2021 - September 2022

University of Nottingham

MMath Mathematics, high 1st class honours

Nottingham, UK

September 2018 - July 2021

RELEVANT EXPERIENCE

Durham University

Ph.D. Student

Durham, UK

October 2021 - Present

- Research student in mathematics, working on tropical and computational geometry, machine learning, and combinatorics.
- Strong experience in mathematical modeling, including implementing machine-learning preprocessing algorithms for scientific consulting firm OSC, and analysing stochastic models of inflation for pensions firm Hymans Robertson.
- Develop and maintain a collection of software packages for performing high-speed computations in Julia and Python. Contributor to multiple open-source software projects including SageMath and OSCAR. Experience conforming to documentation conventions, working alongside fellow mathematicians, all whilst adhering to strong programming practice.

Coltraco Ultrasonics

Software Engineer

Durham, UK

April 2023 - Present

- Engaged in a part-time role at an established ultrasonic technology firm, assuming a pivotal leadership position within its software division.
- Responsibilities include native Android development with Kotlin and Jetpack Compose, back-end development with Firebase, designing RESTful APIs, implementing security protocols in line with OWASP guidelines, mentoring other developers on SOLID programming practice, and designing software architecture.

Smart Manufacturing Technology

Research Contractor

Nottingham, UK

April 2022 - March 2023

- Part-time position at a global engineering consultancy based in Nottingham.
- Position involves detailed analysis of mechanical designs, software development, automating workflows for the company, and contributing to the company's research and development.
- Experience modeling standard and novel parts in SOLIDWORKS CAD software and interacting with patent attorneys.

University of Nottingham

Nottingham, UK

Research Intern

June 2020 - September 2020

- School funded summer research internship under the supervision of Dr. Federico Municchi in computational fluid dynamics.
- Involved contributions to the open source CFD software OpenFOAM in C++. Set up and simulated test cases for Federico's filtered two-fluid model library. Improved documentation.
- Gave a presentation about work done at the APS DFD on November 23rd, 2020 (online).

University of Nottingham

Nottingham, UK

Research Intern

June 2019 - September 2019

- EPSRC funded summer research internship under the supervision of Dr. Alexander Kasprzyk in the university, studying cluster algebras & quiver mutation.
- Developed and reworked a collection of methods in Python for the SageMath Cluster Algebras package.
- Delivered a two-part talk on the 13th and 20th of November on my research to my university's weekly geometry seminars.

ADDITIONAL EXPERIENCE

Mathematics Teaching

October 2021 - Present

- I perform both marking of undergraduate academic work, teaching classes, and administrative work at Durham.
- Involves teamwork with other markers, conformity to tight time constraints and organisational commitments preparing material for each class.

Mathematics Tutoring

June 2018 - Present

- I teach mathematics to A Level and GCSE students to prepare them for A Levels and the STEP examinations.

PASS Leader

September 2019 - June 2020

- Organised and lead small group sessions for first year mathematics students. Taught students basic undergraduate mathematics and mentored them on academic life in general.

ACHIEVEMENTS & HONOURS

- Achieved 'Martin Pluck G103' prize for having the highest average marks of any graduating student on my masters course.
- Achieved 'IMA Prize', a complementary membership to the Institute for Mathematics and its Applications, for very high performance in my masters course.
- Achieved 'Mathematics Prize' for highest average mark in the third year of my degree.
- Achieved 'School Prize' for high performance in the second year of my degree.
- Received offers for funded PhD places at Durham University, Lancaster University, and The University of Nottingham. I was cited as the best applicant in years at Lancaster.

SKILLS

- Deep mathematical and technological knowledge, especially in mathematical modeling, machine learning, analysis and development of algorithms, cryptography, and implementation of computer security protocols.
- Programming Languages: Python, Julia, C, C++, C#, Java, Kotlin, JavaScript. Experience with deep learning frameworks, .NET framework, version control systems, web technology stacks, and native Android app development.
- Software: Office suite, IDA Pro, Ghidra, Wireshark, SOLIDWORKS, MATLAB, OpenFOAM, Mathematica, Maple, SageMath, OSCAR, various IDEs.
- High levels of competence in self-teaching, general high-level research skills (both academic and industrial), adopting new technologies, and interpersonal skills. Strong general scientific understanding.

REFERENCES

References are available upon request. My **website** provides more details about my academic work.