Oliver Daisey

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EDUCATION

Durham University — **Durham, UK**
Ph.D. Mathematics — *October 2021 - Present*

University of Birmingham — **Birmingham, UK**
MSc Cybersecurity, high distinction — *September 2021 - September 2022*

University of Nottingham — **Nottingham, UK**
MMath Mathematics, high 1st class honours — *September 2018 - July 2021*

University of East Anglia — **Norwich, UK**
First year MMath Mathematics, high 1st class honours — *September 2017 - June 2018*

RELEVANT EXPERIENCE

Durham University — **Durham, UK**
Ph.D. Student — *October 2021 - Present*

- Research student working on computational algebra and geometry.
- Regularly interact with cutting edge research in quantitative fields. Contributed new research to be submitted for publication. Regularly travel to international conferences to present my research.
- Strong experience in mathematical modelling, 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 collection of software packages for performing high-speed computations in my field (Laurent phenomenon algebras). Contribute to the SageMath open source mathematical library with my work. Experience conforming to documentation conventions and strong ability to adhere to good programming practice.

Coltraco Ultrasonics — **Durham, UK**
Software Engineer — *April 2023 - Present*

- Part time position at Durham-based ultrasonics technology firm.
- Responsibilities include implementing embedded applications in C, interfacing microcontrollers to the Internet with protocols like LoRaWAN, and building front end Android applications to process and present data sourced by the company's equipment.
- Implement Android and microprocessor security protocols to protect Coltraco applications from reverse engineering attacks.

Smart Manufacturing Technology — **Nottingham, UK**
Research Contractor — *April 2022 - March 2023*

- Part time position at Nottingham based engineering consultancy.
- Position involves detailed analysis of mechanical designs, software development, automating workflows for the company, and contributing to the company's research and development.
- Experience modelling standard and novel parts in SOLIDWORKS CAD software and interacting with patent attorneys.
- Trained in ISO27001 compliance.

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 modelling, analysis and development of algorithms, cryptography, and implementation of computer security protocols.
- Programming Languages: Python, C, C++, C#, Java, Kotlin. Experience with .NET framework and Android app development. Good working knowledge of web technology stack (front and backend).
- Software: Office suite, IDA Pro, Ghidra, Wireshark, SOLIDWORKS, MATLAB, OpenFOAM, Mathematica, Maple, SageMath, various IDEs.
- Strong level of competence in: Self-teaching, general high-level research skills (both academic and industrial), adopting new technologies, interpersonal skills. Strong general scientific understanding.

REFERENCES

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