NICHOLAS SALE

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EDUCATION

University of Oxford *October 2015 - Present*
MMathCompSci Mathematics and Computer Science

Relevant Courses Taken
Topology
Topology & Groups
Rings & Modules
Machine Learning
Introduction to Representation Theory
Knowledge Representation & Reasoning

Being Taken This Year
Algebraic Topology
Computational Algebraic Topology
Homological Algebra
Categories, Proofs and Processes
Computational Learning Theory
Mathematics and Data Science for Development

RESEARCH EXPERIENCE

Applied Research Summer Placement *July 2018 - September 2018*
UK Civil Service *Civil service references available on request*

- 11-week placement researching how machine learning and other data science techniques could be applied to aid my team with data annotation.
- Presented my work and an introduction to topological data analysis in a seminar for the data science community within the government department. Also contributed to the initial literature review for a project in collaboration with the Alan Turing Institute.

Applied Research Summer Placement *July 2017 - September 2017*
UK Civil Service

- 11-week placement researching the feasibility of using data science techniques to identify certain types of network devices based on limited information about their traffic.
- Presented my work at the kick-off meeting for a workshop on analysing network traffic and as a seminar for the data science community in the government department.

Summer School Individual Research Project *July 2016 - September 2016*
UK Civil Service

- Undertook a short project investigating the use of sheaves and sheaf cohomology in data science, following Michael Robinson's 'Tutorial on Sheaves in Data Analytics', and writing a short Haskell script to perform calculations.
- See `https://github.com/NickSale` for code.

Work Experience
BAE Systems, Great Baddow *July 2013*
Microsoft Research, Cambridge *February 2014*

- Spent two weeks at BAE Systems and a week at Microsoft Research learning about industrial research.

TECHNICAL SKILLS

Programming Languages Experienced: Python, Java, C♯ Familiar: C++, Scala, PHP, Haskell
Software & Tools LaTeX, scikit-learn, pandas, Spark (parallel cluster computing)

Developed my technical skills and knowledge during an intensive 10-week summer school in 2016 which covered advanced topics in computer security, including some relevant applications of data science.

Worked on a 6-month engineering project as part of a team for the *Engineering Education Scheme* in 2014, working with Selex ES to design and build an autonomous vehicle. I took lead on researching, designing, and implementing the sensing, geometry representation and path-planning aspects of the project.

AWARDS

New College Undergraduate Scholarship *October 2016 - Present*

· Awarded for examination performance.

CyberFirst Bursary Scheme *October 2015 - Present*

· A government and industry-backed initiative aiming to improve the UK's cybersecurity capability by supporting selected undergraduate students.

GResearch Computer Science Project Prize *2017*

· Awarded for innovation in producing an automatic music composition program for a group project.

Arkwright Scholarship *September 2013 - September 2015*

· A prestigious engineering scholarship awarded after examination and interview.

NON-ACADEMIC POSITIONS

New College Boat Club Committee *New College, Oxford*
President 2018/19, Secretary 2017/18, Lower Boats Captain 2016/17, Women's 3rd Boat Coach 2018/19

Bar Sports Captaincies *New College, Oxford*
Darts Captain 2017/18, Pool Captain 2016/17

Oxford University Roleplaying Society Committee *October 2016 - October 2018*
Netrep (IT Secretary)