Curriculum Vitae

Luke Fairley

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Personal Statement

A Masters of Research and prospective PhD student at the STOR-i Center for Doctoral Training at Lancaster University with a deep passion and natural talent for statistics. I've always excelled in academia and have persistently shown an interest and healthy competitiveness towards Mathematics and Statistics, especially to solve real world problems. I also have a wide range of transferable skills, including problem solving, team work, organisation, and technological literacy.

Education and Qualifications

Lancaster University (October 2018-Present)

- Mathematics BSc with Hons, First Class, 80% average

Neston High School (September 2011- July 2018)

- A-Levels: Mathematics, Physics, Computer Science, A*A*A*.
- EPQ: "How can machine learning be used to recognise the gender of a person from a digital image?", A* at 49/50.
- GCSES: 6 A*s and 4 As, A*s include Mathematics, English Language, Triple Science, and Computer Science.

Experience

STOR-i Summer Internship (July-September 2020)

- I applied for this 8-week internship to obtain an understanding of what it's like to do a PhD, and because of the connection between the available projects and real industrial applications.
- During my time at STOR-i, I pursued a project regarding the Heffernan-Tawn model, which is used in the field of Multivariate Extreme Value Theory, challenging my ability to learn quickly and independently. I learned Extreme Value Theory from scratch through textbooks and academic papers, and implemented its concepts in the programming language R.
- On top of this, I used my creativity to test the limits of the model by designing distributions with which it struggled to be accurate, alongside making alterations to the model to see if I could improve its accuracy. This concluded with a Beamer presentation to my peers of what I had learned and discovered myself, showcasing my ability to communicate academic ideas.

- As well as my independent work, my peers and I watched presentations by the MRes and PhD students about their projects, exposing me to other areas of research statistics, and we also participated in Problem Solving Days. On these days, we were split into groups and given a problem to work on, testing our abilities to understand new ideas quickly, work as a team, and think outside the box.

Extended Project Qualification (2017-2018)

- I undertook this project due to my interest in the mathematical, statistical, and computational underpinnings of neural networks, and how they can be applied to real world problems.
- Throughout this project, I developed key skills such as time management, organisation, comprehension of academic papers, creation of visual aids, communication of complex ideas to a suitable audience, and presentation skills.
- A moderator stated that this project was already at a Bachelor's degree level of sophistication.

Further Skills

- **IT and Computing** - I am proficient in LaTeX and Microsoft Office, and have experience programming in Python since 2014; Java, MySQL and R since 2016; and C since 2018.
- **Experimentation** - I have experience experimenting in: a lab setting, having completed A-level Physics; in a computing setting, trying different methods to obtain the desired functionality with the best efficiency; and in a creative setting, with photography and image manipulation as a creative outlet and hobby.
- **Creativity** - Further expanding on my hobby of photography, I am able to think outside the box, try different things, and attempt to merge ideas from different sources to create something new and interesting.

Awards

- Ogden Trust Physicist of the Year, from Neston High School
- Alan Talbot Memorial Prize, for best performance in first year Mathematics at Lancaster University
- Bevington Prize, for outstanding academic performance in first year at Bowland College, Lancaster University