Lawrence Arscott
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See my portfolio: https://L-Arscott.github.io

Education

MPhys Mathematical Physics

University of Edinburgh 2017-2022

- **First Class (77%): analytical skills, mathematical modelling.**
- Relevant modules include Probability and Statistics, Programming and Data Analysis, Several Variable Calculus and Differentiation, Statistical Physics, Quantum Theory, Differentiable Manifolds...

Year Abroad, Albert-Ludwigs Universität Freiburg 2019-2020

- Lectures and coursework in German, self-study of prerequisites.
  - **Academic presentations in German**: aural presentation of solutions to exercises.
- Master's modules such as Simulating the Physical world, Medical Physics, Standard Model Physics...
- Earned a C1 language certification in German.

Programming Experience:

See github.com/L-Arscott for Github profile

Python:

- **Crystallisation in 2-D HCl**: Master's module "Simulating the Physical World" final project.
  - Statistical Simulation, Molecular Dynamics, Gradient Descent
- **Detection of AI-generated text**: AI-generated VS human-generated fitness advice
  - Use of Naïve Bayes to accurately detect AI use in StackExchange Physical Fitness answers.
- **MIT's Quantum Machine Learning hackathon (2023)** **3rd place** (60 teams)
  - Collaborative coding: devised a program to efficiently transfer images over quantum computers.

R:

- **Business analytics project: factors behind late payments.** (see portfolio for report)
  - Data Preprocessing and Analysis, Logistic Regression, Statistical Visualisation
- **Statistical walkthroughs**: combination of R code and markdown to explain methods in statistics.
  - Technical communication: Regression Methods, Feature Selection, Decision Trees, Estimator Bias

Work and Research Experience

Master's research project "Computational Group Theory" (2021-2022)

- Algorithmic computation of Wigner 3n-j symbols using representations of the symmetric group algebra.

Summer project in symplectic geometry (10 weeks, summer 2021)

- Awarded a **£3,000 scholarship** for a self-motivated mathematical research project.
- Wrote a 50-page academic introduction to symplectic geometry for the physicist.

The Fludyers Hotel: a vibrant pub, restaurant and hotel in Felixstowe.

- Junior chef, part-time, 2022-current — Bartender, holidays 2017-2022

Technical Skills and Interests

- Languages: **English** (native), **French** (native), **German** (C1: proficient).
- Programming: **Python**, **R**, **SQL** (cf statistical projects), HTML, CSS (portfolio creation)
- Formatting & Visualisation: **LaTeX** (proficient), **Power BI** (creation of interactive dashboards)
- **Technical communication: my mathematics website** ("A Quick Note On Maths", see here)
  - **Contribution to university course material**: one of my uploads is now part of the university's "Fundamentals of Pure Mathematics" course after a request by my professor.
- Hobbies include boxing (recently won my first bout!) and swing dancing.