Lawrence Arscott
arscott.lawrence@gmail.com
07496 812703

Education

MPhys Mathematical Physics (University of Edinburgh, 2017-2022)

- **First Class (77%)**
  - Relevant modules include Data Analysis and Visualisation, Probability and Statistics, Simulating the Physical World.
- **Analytical skills, mathematical modelling**: experience both with the rigour of abstract mathematical structure and its pertinence in modelling the problems of our world.
- Final year MPhys project titled Computational Group Theory (2021-2022) Result: First
  - **Independent research, scientific programming**:
    Involved the devising and implementation of efficient computer algorithms to calculate coefficients of interest in quantum field theory.
- **Year Abroad**, Albert-Ludwigs Universität Freiburg (2019-2020)
  - Experience thriving in a **demanding and fast-paced environment**:
    - **Presentation skills**: aural presentation of solutions to exercises, in German.
  - Earned a C1 language certification in German.

Programming Experience:

Click here for Github profile

- Python:
  - **Quantum Machine Learning**: iQuHACK 2023, MIT's annual quantum hackathon.
    3rd place prize (60 participating teams).
    - Quantum image processing, quantum image recognition:
      24h **collaborative programming** challenge exploring **quantum computing approaches to machine learning problems** (in Q#), as a small team.
  - **SQL, Geostatistics, GeoPandas**: statistical analysis of qualities of bathing locations in France.
  - **Statistical Simulation, Molecular Dynamics, Gradient Descent**
    - Masters module "Simulating the Physical World" Project: Crystallisation in 2-D HCl
  - **Symbolic mathematical computation:** final year master's project (cf "Education" section).
- R:
  - **Technical Communication**: Walkthroughs of topics in statistics.
    Combination of R code and markdown to explain methods in statistics. Accompanied by mathematical derivations of core results.
- MATLAB:
  - **Machine learning**: online course (final project: film recommender in Python).
  - **Masters-level programming module** "Physics of Medical Imaging".

Technical Communication

Creation and maintenance of a mathematics-focused website ("A Quick Note On Maths", see here)

- **Scientific writing**: regular upload of 3-5 page-long notes, each presenting a different topic in maths.
- **Visualisation skills**: use of summarising diagrams to convey complex ideas.

Sample work in data analysis summary: please click here, or email for a copy.

Research Experience

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

- Awarded a **£3,000 scholarship** for a summer project.
- **Self-motivation, independent study**: developed qualities key to engaging in research.

Mathematical physics honours project (2020-2021, semester 2) Result: First

Presentation of the solution to a **mathematical model of magnetism** before an audience.

- **Clear communication of scientific ideas** to an audience:
  - Markers considered my talk on a subject that was "quite technical" to be "really clear".

Honours group project (2020-2021, yearlong) Result: First

Production of a 40-page report on experimental tests of general relativity as a small team.

- **Teamwork**: received praise on a well organised and executed project.

Technical Skills

- Languages: **English** (native), **French** (native), **German** (proficient user).
- Document structuring and editing: **LaTeX** (proficient user), HTML, CSS.

Work Experience

The Fludyers Hotel (Summer and Winter holidays, 2017-current)

A vibrant pub, restaurant and hotel where I live, in Felixstowe. (Reference available upon request)

- **Dependability, flexibility**: Taken on and adapted to a variety of roles including bartender, hotel receptionist and, more recently, chef.

Personal Achievements and Hobbies

- Boxing: Recently took part in, and won, my first amateur bout.
- Swing dancing: Enjoying twice weekly classes with the university's swing dance society.

Referees

Dr Anthony Kennedy — MPhys project supervisor
University of Edinburgh, Physics and Astronomy
0131 650 5272
Tony.Kennedy@ed.ac.uk

Dr Johan Martens — Summer project supervisor
University of Edinburgh, Mathematics
0131 651 7759
Johan.Martens@ed.ac.uk