Laurie McClymont – Curriculum Vitae

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Personal Profile

- I am a physicist, studying high-energy particle collisions at the Large Hadron Collider experiment.
- This has given me experience of analysing and understanding large data sets with computational tools within a collaborative environment and presenting the results to a range of audiences.
- I now aim to use large data to tackle real-world problems; and my research experience in addition to my natural curiosity and strong mathematical background make me well suited to this role.

Data Analysis Experience

**Sep 2014 -
Sep 2017**   **High Energy Physics Group, University College London**
PhD Candidate

- Member of the ATLAS collaboration searching for new physics using large data sets.
    - Worked within many diverse teams, in an international collaboration of 3,000 scientists.
    - Collaborated on large scale data analysis projects using Python, C++ and GitHub.
    - Had an 18 month placement at the main CERN site in Geneva.
- Lead analyser measuring the efficiency of the ATLAS b-jet trigger.
    - A technical measurement that is essential for many analyses within the collaboration.
    - Involved detailed study and understanding of a complicated data-set.
    - Measurement performed to relevant deadlines and results effectively communicated to users.
- An analyser in a team searching for new physics using pairs of b-jets.
    - We use a machine learning algorithm to identify signal and reject background.
    - I validated the fit function used to predict the background in data, by investiaging the performance of the fit function in many pseudo-data sets taken from simulation.
    - Led the use of the b-jet trigger to extend the reach of this analysis.
- Regularly presented conclusions of data-analysis to a range of audiences.
    - Routinely reported details of analysis to technical meetings in ATLAS and at UCL.
    - Selected to summarise results to large scientific audiences; including conferences and workshops.
    - Involved in public outreach explaining current research to non-physicists, including school visits.

**June 2012 -
Sep 2012**   **Institute of Astronomy, University of Cambridge**
Summer Research Intern

- Spent 8 weeks during the summer analysing data from two large astronomical telescopes.
- Used a statistical profile likelihood method to identify possible "quasar" candidates for further study.

Education

2010-14   **Merton College, University of Oxford**
- MPhys Physics - 2:1 (68%)
- Courses including mathematical problem solving in a range of situations.

2004-10   **Altrincham Grammar School For Boys**
- A-Levels: Maths, Further Maths, Physics, History (A*, A* , A*, B).

Programming Skills

- **Python**   2 years experience of use in large scale data analysis.
  Self-taught use of data-science python libraries (pandas, numpy, seaborn, scikit-learn).
- **C++**   3 years experience of use in large scale data analysis.
- **Git**   3 years of using GitHub in group and private analysis projects.
- **SQL**   Basic knowledge, self taught using online tutorials and private projects.
- **Misc.**   Experience user of Excel, LaTeX, Word, bash, linux terminal.

Interests

- **Sports**   Play regularly in a local cricket and 5-a-side football team. Keen runner and cyclist.
- **French**   Conversational level. Practice through weekly in person meetings with a french native.
- **Travel**   Enjoy exploring a new city or country and its culture.

Referees available upon request