Laurie M^{c}Clymont – Curriculum Vitae

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Email	laurie_mcclymont@hotmail.com	**Nationality**	British

Personal Profile

- I am a physicist, studying high-energy particle collisions at the LHC experiment at CERN.
- 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 experiment searching for new physics using large data sets.
  - Work within many diverse teams, in an international collaboration of 3,000 scientists.
  - Perform 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 experiment.
  - Involves 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 validate 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.
  - Lead the use of the b-jet trigger to extend the reach of this analysis.
  - Published three public results in 2016.
- Regularly presented conclusions of data-analysis to a range of audiences.
  - Routinely report 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 eight 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%)
- Involved mathematical problem solving for a range of situations; e.g general relativity and particle physics.

2004-10 **Altrincham Grammar School For Boys**

- A-Levels: Maths, Further Maths, Physics, History (A*, A* , A*, B).

Programming Skills

- **Python** Experienced; 2 years of use in large scale data analysis.
  — Self-taught use of data-science python libraries (pandas, numpy, seaborn, scikit-learn).
- **C++** Experienced; 3 years of use in large scale data analysis.
- **Git** Experienced; 3 years of using GitHub in group and private analysis projects.
- **SQL** Basic; Self taught using online tutorials and private projects.
- **Misc.** Experienced 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

Ideas of Other Relevant Experience

June 2013 - Sep 2013 **Rutherford-Appleton Laboratory, Didcot**
Summer Research Intern

- Spent eight weeks analysing a particular new physics model using a C++ framework.
- Identified an angular variable could be used to seperate signal from background.

Oct 2010 - Oct 2011 **Merton College JCR Access Representative**

- Interacted with school students to encourage applications from a wide range of backgrounds to the college.
- Liased with officials from Merton College and schools to organise visits and encourage students.

Still to do...

October 2010 - October 2011 **Private projects**

- Used random-trees algorithm to predict survival of titanic passengers, using a tutorial
- More to follow