EWEN GILLIES

Blends strong mathematical foundation with diverse software experience. Develops new research approaches based on machine learning. Excels at facilitating international collaborative efforts to drive research results.

EDUCATION

Imperial College London
PhD, Computer Science & High Energy Physics, 2014 - 2018 (Expected)

Works with COMET collaboration on High Energy Physics.
Develops track triggering and track finding algorithm using machine learning.
Develops analysis software and oversees large scale Monte Carlo simulations.

University of Edinburgh
Master of Science (MSc) with Distinction, Theoretical Physics
2013 - 2014

Bachelor of Science (BSc with Honours), First Class, Theoretical Physics
2009 - 2013

Awards
- The Higgs Prize, 2014
Highest mark in physics MSc Degrees
- The Nimmo Prize, 2014
Best thesis in physics MSc Degrees
- Pre Honours Certificate of Merit for excellence in Junior Honours, 2009 & 2010

Graduated with the highest overall mark and highest final project mark during both BSc and MSc degrees.

EXPERIENCE

High Energy Accelerator Research Organization
Tsukuba, Japan
Japan Society for the Promotion of Science Research Fellowship, 2016 - 2017
Track Triggering algorithm
Developing FPGA firmware for customised COMET readout electronics to incorporate bonsai boosted decision trees in signal event triggering.

Yandex Data Factory
Moscow, Russia
Collaborative Research for PhD Thesis, 2015 - Present
Track Triggering Algorithm
Designing novel bonsai boosted decision tree based algorithm that uses tracking data to quickly decide if an event should be saved to disk.
Publication expected in 2018
Track Finding Algorithm
Developing novel approach to offline tracking analysis in particle physics.
Utilising gradient boosted decision trees and reweighted inverse Hough transforms to identify hits from signal tracks.
Publication expected in 2018

EXPERIENCE *continued*

ALICE Collaboration
Saint Petersburg State University, Russia
Master's Dissertation, Summer 2014
Simulated and studied strange particle production correlations.
Publication: https://arxiv.org/abs/1510.02080

LHCb Collaboration
University of Edinburgh, UK
Senior Honours Project, Spring 2014
Optimised machine learning based classification to obtain an internationally competitive lifetime measurement for the $B_s^0 \rightarrow J/\psi + \eta$ decay.
Publication: https://arxiv.org/abs/1607.06314

CMS Collaboration
Deutsches Elektron Synchrotron, Germany
DESY Summer School Research Project, July & August 2013
Determined control regions in Higgs search using machine learning.

SCHOLARSHIPS AND GRANTS

NVIDIA
GPU Grant Program, 2017
Awarded for work on COMET tracking algorithm

Japan Society for the Promotion of Science
Predoctoral Fellowship Grant, 2016
Funding to develop FPGA firmware for COMET tracking trigger

Imperial College London
The Shrödinger Scholarship, 2014
PhD funding awarded annually to applicant in the Department of Physics

University of Edinburgh
The Higgs Center Scholarship, 2013
The Edinburgh Global Master's Scholarship, 2013
Awarded on the basis of academic merit for MSc degree

Institute of Physics
Nuffield Foundation Grant, 2012
Awarded for summer internship on COMET

SKILLS

Programming Languages	**Hardware Description Languages**	**Languages**
C++, Python	Verilog, VHDL	Russian (A2)
		Spanish (A2)

CONTACT

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