




Guillermo Hamity

PhD | Data Engineer | Machine Learning


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 HamityNicolas

Languages

 English – Native

 Spanish – Native

 Afrikaans – Conversational

 French – Beginner

Professional Skills

Python

Tensorflow

Scipy

Keras

Pandas

Numpy

Jupyter

matplotlib

C++

valgrind

CMake

Unit Tests

Statistics

Hypothesis testing

Likelihood Models

A/B tests

Machine Learning

Feature extraction

BDTs

Random Forests

Neural Networks

Autoencoders

GANS

Tools

Git

Git-CI

Docker

YAML/JSON

Kubernetes

Linux

Latex

Emacs

VS-Code

Download My CV

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About me

Passionate about **applied data analysis** with expertise in code development and deployment, data preparation, distributed computing, machine learning, model fittings and hypothesis testing. Currently a researcher in Experimental Particle Physics at the University of Edinburgh searching for new physics at the *Large Hadron Collider, CERN*. Involved in publications and experienced in **collaborative research**. I am integrated into **leadership** roles within the 3000+ people international collaboration, am an **efficient independent** worker, and have experience with **teaching** and **supervision**.

WORK EXPERIENCE

2019-08-01
Ongoing



Postdoctoral Research Associate  The University of Edinburgh
ATLAS Experiment

Active in the development of all areas of physics **analysis**, incl.: data preparation, software infrastructure development and maintenance, algorithm design and deployment, and statistical interpretation.

- **Developed software** for particle tracking and identification in particle reconstruction and triggering. **Deployed software** in collaboration software release.
- Delivered software algorithms using **neural-networks** for particle identification, as well as **develop c++/python** analysis tools with **widespread use in the collaboration**.
- Have been an **analysis leader**, involved in ongoing publications, including technical reports. Experienced in paper writing and peer-review in **leading journals**. Present at international conferences.
- Convened over research team in **group meetings** with regular interaction and group work. Am responsible for **teaching and supervision** of several PhD students on analysis and tasks within the working group.
- **Deliver lectures** and workshops on **machine learning** with an emphasis on applicability in the field of particle physics. Four week course covering **data preparation, regression and classification decision trees, feature extraction, and neural-networks (DNNs, RNNs, CNNs, VAEs, GANs)**

EDUCATION

2015–2019




PhD research
ATLAS Experiment

 The University of Sheffield

Thesis: Probing the Beyond the Standard Model Higgs Sector using the ATLAS Detector


2013–2015

MSc in Physics

 Uni of Witwatersrand (ZAR)

2008–2012


BSc and Honours in Physics

 The University of Pretoria (ZAR)

HIGHLIGHTS

Involved in several publications (full list on request), e.g.

PhysRevLett.
125.051801
2020

Search for Heavy Higgs Boson decaying into Two Tau Leptons with the ATLAS Detector Using pp collisions at $\sqrt{s} = 13$ TeV, **Phys. Rev. Lett.** **125**, **051801**, ATLAS
 10.1103/PhysRevLett.125.051801

Attended training courses/schools, e.g.:

- **5th HEP C++ Course and Hands-on Training - Advanced C++**, CERN, 2022
- **GitLab CI/CD and Docker Fundamentals — Analysis Preservation**, CERN, 2020
- **Fourth Machine Learning in High Energy Physics Summer School 2018**, Oxford, 2018

Presented several international conferences, e.g.

- **56th Rencontres de Moriond on QCD and High Energy Interactions, Exotic Higgs at ATLAS and CMS**, La Thuile Italy, 19-26 March, 2022

and dozens of internal workshops and conferences over the years.

Full list of publications, talks and schools upon request