




# Guillermo Hamity

PhD | Data Engineer | Machine Learning


## Contact


 guillermohamity.github.io/

 ghamity@pm.me

 073 4161 5586

Office 3404


 JCMB, Kings Buildings  
University of Edinburgh  
EH9 3FD, Scotland, UK

 ghamity


 guillermohamity

 ghamity


 ORCID: 0000-0002-4537-0377


 HamityNicolas

## Languages

 English – Native

 Spanish – Native

 Afrikaans – Conversational

 French – Beginner

## Professional Skills

Python/C++

Tensorflow

Scipy

Keras

Pandas

Numpy

Jupyter

matplotlib

valgrind

CMake

Unit Tests

## Machine Learning

ETL

Feature extraction

BDTs

Random Forests

Neural Networks

Autoencoders

GANS

## DevOps

VC

Git-CI

Docker

Kubernetes

Linux/Server

Distributed Computing

IaC (Terraform)

## Statistics

Hypothesis testing

Likelihood Models

A/B tests

Simulation

## Download My CV

Download my CV via the QR below



## 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