Guillermo **Hamity**

PhD | Data Engineer | Machine Learning

Contact

- guillermohamity.github.io/
- ghamity@pm.me
- 0x1B59829E2
- 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 intepretation.

- **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 resposible 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 📍 The University of Sheffield
ATLAS Experiment
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 Leoptons with the ATLAS Detector Using pp 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