

Dr. Guillermo Hamity

PhD | Data Engineer | Machine Learning | Quantitative Research

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

Machine Learning

ETL

Feature extraction

BDTs

Random Forests

Neural Networks

Autoencoders

GANS

Technology

AWS

SQL

Git-CI

Docker

Kubernetes

Linux/Server

MongoDB

Statistics

Hypothesis testing

Likelihood Models

A/B tests

Simulation

Download My CV

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About me

Decade+ in **applied data analysis** with expertise in *code development and deployment, data preparation, distributed computing, machine learning, and hypothesis testing*. Currently leverage ML for stochastic modelling in sports betting markets. Previously a researcher at the *Large Hadron Collider, CERN*. Involved in leading publications and experienced in **collaborative research** and **supervision**, held **leadership** roles within the 3000+ people collaboration, and am an **efficient independent** worker and clear **communicator**.

WORK EXPERIENCE

From Jun. 2023

Quantitative Researcher

PLAYMETECH, London

- Lead the design and deployment **stochastic models** to predict match and odds in different sports betting markets using a data based approach.
- Develop ML based strategies for sports betting with *Bayesian and Reinforcement* techniques and model their intrinsic risk. Document and communicate strategies transparently.
- Create database processing pipelines from several **SQL and NoSQL** sources.

2019–May 2023

Postdoctoral Research Associate

The University of Edinburgh

ATLAS Experiment

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

- Developed and deployment of software for particle tracking and identification in the ATLAS collaboration software release.
- Delivered 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** and at international conferences. Convened research teams with regular interaction and group work.
- Lectured machine learning** MSc course with an emphasis on practical application, covering **data preparation, regression, 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 Standard Model Higgs Sector using ATLAS

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

Search for Heavy Higgs Boson decaying into Two Tau Leptons with the ATLAS Detector Using *pp* collisions at $\sqrt{s} = 13$ TeV, **2020**, 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 at several international conferences, e.g.

- 56th Rencontres de Moriond on QCD and High Energy Interactions**, La Thuile, Italy, 2022

and dozens of internal workshops and conferences over the years.

Full list of publications, talks and schools upon request