




# Dr. Guillermo Hamity

PhD | Data Engineer | Machine Learning | Quantitative Research

## Contact


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## Languages

 English – Native

 Spanish – Native

## Professional Skills

Python/C++

Python TensorFlow Keras

Scipy Pandas Numpy

pytest pip valgrind CMake

## Machine Learning

ETL Feature extraction

(Un)Supervised Learning

DTs and Ensembles

DNNs/CNNs/RNNs

Encoders and Adversarial

Mixture Density Networks

Regularisation/Bayesian Layers

TF-Probability

TF-Datasets

## Technology

AWS SQL/Mongo Git-CI/CD

Docker kubectl/qsub

Linux/Server

## Statistics

Hypothesis testing A/B tests

Likelihood models Simulation

Stochastic models

## Download My CV

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## About me

Passionate and results-driven **data scientist** with a proven track record in delivering impactful data solutions. I specialize in **code development and deployment, data preparation, efficient handling of distributed computing, advanced machine learning techniques, and rigorous hypothesis testing**. Currently, I apply my skills to the dynamic realm of sports betting markets, leveraging ML for stochastic market modeling.

- Researcher at the **LHC, CERN**, actively contributed to groundbreaking projects and collaborated with diverse teams.
- Recognized for **leadership** in steering publications and **collaborative research**, I am adept at managing complex projects and supervising teams.
- **Efficient independent worker** with a knack for **clear communication**.
- Remain at the forefront of technological advancements in the field, exemplified by the **ML lectures** delivered at the **University of Edinburgh**.

## WORK EXPERIENCE


From Jun. 2023 | Quantitative Researcher

 PLAYMETECH, London

- Successfully prototyped, tested, and deployed **stochastic machine learning models** to predict match outcomes and odds in diverse sports betting markets, utilizing a data-driven approach.
- Developed outcome-oriented trading strategies and implemented a robust testing suite to **benchmark models** against historical data. Effectively communicated results with clarity and efficiency.
- Led the research and development of innovative neural network architectures, including **Recursive, Bayesian, and MixtureDensity Deep Networks**, utilizing state-of-the-art technologies. Modeled the intrinsic risk associated with these architectures.
- Created database processing pipelines from various **SQL and NoSQL** sources, packaging **production-ready code** for live predictive analysis.

2019–May 2023



**Postdoctoral Research Associate**  The University of Edinburgh  
**ATLAS Experiment, CERN**

Engaged in comprehensive physics **analysis**, encompassing data preparation, software development/maintenance, algorithm design/deployment, and statistical interpretation.


- Spearheaded the **development and deployment of software** for particle tracking and identification in the ATLAS collaboration software release.
- Designed and implemented algorithms, including those utilizing **neural networks**, for particle identification. Additionally, developed widely-used analysis tools in C++/Python within the collaboration.
- Took a **leadership role** in analysis efforts, actively contributing to ongoing publications and technical reports. Proficient in paper writing and peer-review processes for **leading journals** and international conferences. Facilitated research teams through regular interaction and collaborative group work.
- **Lectured** on machine learning in the MSc course, emphasizing practical applications. Covered **data preparation, regression, classification, decision trees, feature extraction**, and various **neural network architectures** (*DNNs, RNNs, CNNs, VAEs, GANs*).

## EDUCATION

2015–2019



**PhD in High Energy Physics**  
**ATLAS Experiment, CERN**

 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)