



# Pablo Martínez Agulló

PhD in Physics

Expert on data analysis using deep-learning algorithms

After completing my PhD in Particle Physics, I am looking forward to new challenges. I conducted my research with the ATLAS collaboration at the European Organisation for Nuclear Research (CERN), where I analysed data from the Large Hadron Collider (LHC). While working at the Instituto de Física Corpuscular (IFIC), I developed several frameworks for deep learning to boost our research. My main interests are artificial intelligence and the R&D projects.

## EDUCATION

**2017-2024**

PhD in Physics | University of Valencia (Spain)

**2016-2017**

MSc in Advanced Physics | University of Valencia (Spain)

**2015-2016**

Erasmus | RWTH Aachen University (Germany)

**2011-2015**

Degree in Physics | University of Valencia (Spain)

## EXPERIENCE

**September 2019 – March 2024**



IFIC/CERN | Researcher (Spain/Switzerland)

- Analysis of large volumes of data
- Use of advanced statistical techniques for data interpretation
- Development, optimisation, and integration of supervised Deep Learning models
- Translation of scientific theories into algorithms
- Collaborative software development
- Use of version control systems
- Presentation of results at national and international conferences
- Data taking responsible for the ATLAS detector

**February 2020 – September 2021**



University of Valencia | Lecturer (Spain)

- Teaching and assessment of the courses Electromagnetism and Physics Laboratories

**April 2019 – August 2019**



Capgemini | Data scientist (Spain)

- Consultant in the Insights & Data team
- Development of a sentiment analysis tool based on web scraping and Natural Language Processing (NLP)

**December 2017 – January 2019**



IFIC/CERN | Researcher (Spain/Switzerland)

- Data analysis in the ATLAS collaboration
- Development of front-end and back-end web service to monitor the performance of the ATLAS detector
- Development and integration of tools for detector simulations

**June 2016 – September 2016**



ESA | Internship (Netherlands)

- Internship at the European Space Agency (ESA) and Leiden University
- Study of the impact of outreach multimedia using an NLP-based application

## RESEARCH STAYS

May – July 2022

CERN (Geneva, Switzerland)



September – December 2018

CERN (Geneva, Switzerland)



March – May 2018

CERN (Geneva, Switzerland)



## OUTREACH

- Contributor to the physics podcast *Oscilador Armónico* (2023 - 2024)
- Speaker/host of the public event *10º aniversario del descubrimiento del bosón de Higgs* (700+ attendees, 2022)
- High school talks: *¿De qué está compuesta la realidad?* (2022-2023)
- Video *LHCRun3* (20k+ views, 2022)
- Organizer of the science fairs *Expociencia* and *Experimenta* (2019-2022)

## HARD SKILLS

- Programming:
  - Languages: Python, Bash, C++, SQL, HTML
  - Code optimisation skills
  - GitHub/GitLab, CI/CD, Docker
- Data science and Deep Learning libraries:
  - Pandas, NumPy, SciPy
  - PyTorch, XGBoost, keras
  - ROOT TMVA
  - BeautifulSoup
- Studies in Artificial Intelligence and Deep Learning
- Experience in AI projects: BDT, NN, NLP, etc
- OS: Linux, MacOS and Windows
- Conversion of scientific theories into algorithms
- Statistics and mathematics
- Cloud computing
- Learning/improving: TensorFlow, NLP

## CONTACT



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GitLab: @martinpa



GitHub: @MartinezAgullo

## SCOLARSHIPS

- 2019: Scholarship from the Valencian Government (GVA) for the hiring of research personnel
- 2017: Severo Ochoa Collaboration Scholarships at CSIC Centers of Excellence at IFIC

## SOFT SKILLS

- Teamwork
- Autonomy
- Leadership
- Very good communication and interpersonal skills
- Creative problem-solving
- Large experience in international environments
- Enthusiasm for learning
- Time and deadline management
- Critical thinking

## LANGUAGES

- Spanish :: Native
- English :: Professional
- Catalan :: Native
- German :: Basic