

# Héctor Ramírez

## Data Scientist | PhD in Physics

**Brief résumé:** I recently earned my PhD in Physics where I specialized in experimental data analysis and mathematical modeling. I led several short and long-term projects in collaboration with colleagues from several institutions in different countries. The results of which I have presented as a speaker in multiple international seminars and conferences. Moreover, I am continuously extending computer skills with numerous courses on **Data Engineering**, **Data Science** and **Machine Learning**. To mention some skills: Supervised and Unsupervised Learning with scikit-learn; Deep Learning with Keras, TensorFlow and PyTorch; NLP with NLTK and spaCy; SQL; PySpark, AWS; Tableau; etc.

Contact	(+34)693012381 ☎ — Mail ✉ — LinkedIn  — GitHub  — Webpage 
Residence	Valencia, Spain (with Spanish work permit).
Birth and Nationality	May 20th, 1990 — Mexican.

## Education

<b>PhD in Physics</b> 2015-2019	<b>University of Valencia</b> , Spain. Dissertation: ' <i>Noncanonical Approaches to Inflation</i> '
<b>MA in Advanced Physics</b> 2013-2014	<b>University of Valencia</b> , Spain. Dissertation: ' <i>The Hu-Sawicki Model of Modified Gravity</i> '
<b>BA in Physics</b> 2008-2013	<b>University of Veracruz</b> , Mexico. Dissertation: ' <i>Quantum Chaos in the Dicke Model</i> '
2012	<b>University of Valencia</b> (Academic exchange semester), Spain.

### Additional training

I have been continuously learning **Data Engineering**, **Data Science** and **Machine Learning** techniques following the course plan by **DataCamp**, where I have completed more than 50 courses, some of which make up the following main tracks:

<b>Data Scientist</b> 2019	<b>DataCamp</b> – <b>Certificate</b> 100-hour track on statistical and machine learning techniques to analyze and interpret complex data.
<b>Data Analyst</b> 2019	<b>DataCamp</b> – <b>Certificate</b> 60-hour track on data visualization and manipulation techniques to uncover insights and help organizations make better decisions.
<b>Machine Learning Fundamentals</b> 2019	<b>DataCamp</b> – <b>Certificate</b> 20-hour track on the fundamental concepts in Machine Learning.

## Skills

### Computer

Languages	Python, SQL, Mathematica, Scala.
Data Engineering	PostgreSQL, Apache Airflow, Amazon Web Services (S3, SNS).
Data Analysis	Spreadsheets, Tableau, NumPy, pandas.
Machine Learning	scikit-learn, PySpark, Keras, TensorFlow, PyTorch, XGBoost, NLTK, spaCy.
Visualization	Matplotlib, Seaborn, Bokeh, Plotly.
Web	HTML, CSS.
Other	Git, Jupyter Notebook, Docker.

### Soft skills

**Communication** (public speaking, persuasion, writing skills); **Leadership** (project management, supervising, mentoring); **Critical Thinking** (creativity, logical thinking, problem solving, research, organization); **Teamwork** (collaboration, interpersonal skills, networking, social skills, team building).

### Languages

**Spanish:** Native; **English:** Fluent; **French:** B2 level. I have also taken **German** and **Italian** courses.

## Professional Experience

### Acrcy

Jan 2020 -

### Technology Consultant

- Creation of relational and NoSQL databases from scratch using AWS.
- Main software development using Python.

### International projects

I have done research placements in the UK, Japan, Italy and in the Fermilab National Laboratory (USA), where I led short- and long-term collaborative projects and presented results as international speaker.

Apr - Jun, 2018

**Institute of Cosmology and Gravitation (ICG), University of Portsmouth**  
Portsmouth, UK.

Jan - Mar, 2018

**Kavli Institute for the Physics and Mathematics of the Universe (IPMU),  
The University of Tokyo**

May - Aug, 2017

**Fermi National Accelerator Laboratory (Fermilab) &  
Kavli Institute for Cosmological Physics – The University of Chicago**

Apr - Jun, 2015

**Abdus Salam International Center for Theoretical Physics (ICTP)**  
Trieste, Italy.

### Teaching

I have taught undergraduate courses managed by the Department of Theoretical Physics at the University of Valencia during four academic years—about 45 hours in the classroom (groups of around 15 students) + class preparation, per academic year.

### Classical Mechanics

**Teaching Assistant** (2017-2019): Resolution of problems, examinations, evaluation of teaching contents and elaboration of teaching material.

### Introductory Physics

**Teaching Assistant** (2015-2018): Resolution of problems, occasional lectures, examinations and grading.

### Journal referee

I have refereed scientific articles for the journals **Physical Review Letters** and **Physical Review D**, both from the American Physical Society (USA).

## Awards and Fellowships

2015 - 2019

**FPI Research fellow** by the *Ministry of Economy, Industry and Competitiveness* (MINECO), Spanish Government.

Jul - Sep, 2014

**Research scholarship** granted by the University of Valencia

Jan - Jul, 2012

**Grant for an abroad academic exchange semester** by the University of Veracruz  
Carried out at the Faculty of Physics, *University of Valencia*.

2009 - 2011

**Faculty award (x2)** due to academic excellence  
*University of Veracruz*

## Publications

### Data Science

- “Your live Covid-19 tracker with Airflow and GitHub Pages”, **Towards Data Science**; 2020.

### Physics (scientific articles)

A total of **8** research articles published either in **Physical Review D** (Astronomy & Astrophysics – Scie.; Physics, Particles & Fields — Scie.) [Impact factor: 4.568] (x5); **Journal of Cosmology and Astroparticle Physics** (Astronomy & Astrophysics – Scie.; Physics, Particles & Fields – Scie.) [Impact factor: 4.734] (x2); **Physics of the Dark Universe** (Astronomy & Astrophysics – Scie.) [Impact factor: 5.4c25] (x1).

My full list of publications can be found in my Inspire page: <http://inspirehep.net/author/profile/H.Ramirez.1>

## Talks

Conference talks	<b>5</b> talks in Valencia, Paris, Teruel (Spain), Kyoto (Japan) and Portsmouth (UK).
Seminar talks	<b>13</b> talks in Valencia (x2), Paris (x2), Tokyo, London, Portsmouth (UK), New York, Chicago, UC Berkeley (USA), Schladming (Austria) and Veracruz (Mexico).

Details about my talks can be found in <https://hectoramirez.github.io/Files/CV/Talks.pdf> .

## References

### Dr. Olga Mena Requejo

Consejo Superior de Investigaciones Científicas (CSIC/IFIC)



### Prof. Nick E. Mavromatos

King's College London



### Prof. David Wands

University of Portsmouth



### Prof. Shinji Tsujikawa

Tokyo University of Science

