

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 have extended my data analysis techniques with numerous courses on Data Engineering, Data Science and Machine Learning. To mention some skills: SQL, Spark, Cloud Computing with AWS, Tableau, Supervised and Unsupervised Learning with scikit-learn, Deep Learning with Keras, TensorFlow and PyTorch, Natural Language Processing, etc.

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

Education

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

Skills

Computer

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

Languages

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

Sports

Highly active in organizing, managing and participating in sport teams, mainly on **football soccer**—I have joined and organized football teams in every place I have done a research stay.

Awards and Fellowships

2015 - 2019	FPI Research fellow by the <i>Ministry of Economy, Industry and Competitiveness</i> (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, <i>University of Valencia</i> .
2009 - 2011	Faculty award (x2) due to academic excellence <i>University of Veracruz</i>

Professional Experience

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 the last 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).

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

Talks

Conference talks	5 talks in Valencia, Paris, Teruel (Spain), Kyoto (Japan) and Portsmouth (UK).
Seminar talks	13 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

