

# ORIOL RICART VILARRUBIAS

## Physicist and Data Scientist

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in <https://www.linkedin.com/in/oriol-ricart/>



## EDUCATION

### Master's Degree in Applied Philosophy

#### UAB

Sept. 2022 – Ongoing    UAB, Barcelona

Studying a Master in Applied Philosophy with subjects as Praxeology, Politics, Rationalism and Bioethics.

### CFIS - Centre de Formació Interdisciplinària Superior

#### UPC

GPA: 7.96/10

Sept. 2017 – May. 2022    UPC, Barcelona

- Allows the execution of both careers simultaneously.

### Physics Engineering Degree

#### ETSETB, UPC

GPA: 8.21/10

Sept. 2016 – May. 2022    UPC, Barcelona

- Physics degree with some telecommunications view for Signal processing subjects.
- Some featured subjects that I liked the most:
  - Numerical and Computational Methods (1 & 2): using Matlab
  - Statistical Physics
  - Mechanics (with introduction to Special Relativity)
  - Quantum Mechanics
  - Control Theory
  - General Relativity (ongoing)
  - Physics of Fluids (ongoing)

### Data Science Engineering Degree

#### FIB, UPC

GPA: 7.71/10

Sept. 2017 – May. 2022    UPC, Barcelona

- Joined the first promotion of this recently created degree to cover the growing data science market.
- Some featured subjects that I liked the most:
  - Probability and Statistics (1 & 2)
  - Mathematical Optimization
  - Machine Learning (1 & 2)
  - Information Retrieval and Analysis
  - Image Processing and Machine Vision

### Technological Baccalaureate

#### Ins. Molí de la Vila

GPA: 9.41/10

Sept. 2014 – Jun. 2016    Capellades, Barcelona

## PERSONAL PROFILE

I'm a person interested in discovering and finding solutions to problems that can arise. Eager to have a positive impact on the society we live in and committed to create a fairer world.

## PROGRAMMING LANGUAGES

C++    Advanced

Matlab    Advanced

R    Advanced

SQL    Intermediate

Scala/Spark    Intermediate

Python    Proficiency  
Pandas, Numpy, TensorFlow, Pytorch

## LANGUAGES

English    B2

Catalan    Native

Spanish    Native

## TALKS

### Why does Physics Matter?

La Pobla de Claramunt

A little talk I did at my hometown during a conference series. Youtube link

## ACADEMIC EXPERIENCE

### Research Student

#### IIIA - CSIC

📅 Jan. 2023 – July 2023      📍 Barcelona

- Granted the Scholarship "JAE Intro ICU" for introduction to research in IIIA.
- Designing Reinforcement Learning algorithm's regarding ethics with autonomous cars (self-driven cars).
- Solving Multi-Objective MDP's with RL methods.

### Final degree Thesis

#### University of Texas at Austin

📅 Sept. 2021 – May. 2022      📍 Austin, USA

- Collaboration with Prof. Shoemaker and Prof. Laguna exploring the different paths that a collision between two Black Holes may take depending on the initial configuration.
- Worked with their group of PhD's and Postdoc's to create a final thesis.
- Attended as a listener to some graduate classes to deepen knowledge: Relativity Theory I, Relativity Theory II & String Theory.

### Astrophysics Research

#### CBL, UPC

📅 August 2018      📍 Castelldefels

- Collaboration with Prof. Santiago Torres studying the population of white dwarf stars in the near vicinity of Earth to account for discrepancies between experimental and theoretical Hertzsprung-Russell models of their population.

## WORK EXPERIENCE

### Substitute Teacher

#### UPC

📅 Sept. 2023 – Jan. 2024      📍 Barcelona

- Teaching the subject of Statistical Programming and Databases at the MESIO master.
- Introducing Scala language and Spark engine to the students.

### Substitute Teacher

#### Euncet

📅 Sept. 2023 – Jan. 2024      📍 Barcelona

- Teaching the subject of Physics I at Euncet school in the CTEF degree.

### Data Scientist at Phenobyte

#### Phenobyte

📅 June 2022 – Dec. 2022      📍 Barcelona

- Worked along Paula Petrone to develop a project regarding transcription with AI and NLP.
- Benchmarked different technologies able to do the process (Google, Microsoft and some other smaller ones).
- Made our in-house models with HuggingFace to test the results.

## AWARDS AND SCHOLARSHIPS

### CFIS Double-Bachelor Scholarship

#### UPC

📅 Sep 2017 – May. 2022

- Scholarship from CFIS that allows students to complete two full bachelors in engineering.

### JAE Intro ICU

#### CSIC

📅 Jan. 2023 – June 2023

Scholarship regarding the realization of a research project in the IIIA center from CSIC.

### XXVII Spanish Physics Olympiad

📅 2016      📍 Sevilla, Spain

- Classification from the Catalan Physics Olympiad and participation in the Spanish Physics Olympiad.

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## Internship at Amalfi Analytics

Amalfi

📅 July 2020

📍 Barcelona

- Implementation of a Human Disease Network with data from entrances in hospitals. This tool is intended for medics to be able to gain insights and valuable information.
- Working from back-end to front-end, treating the data and directly preparing the final graph.

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## Private Tutoring

📅 2014 – 2020

📍 Igualada and Barcelona

- Helping to understand math, physics and chemistry to different students that coursed Bacallaureate or University.

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## Sports and Leisure Animator

📅 September 2017 – July 2018

📍 Igualada

- Working and being responsible for groups of children both in sports as a trainer and in a scouts' group.