Arturo Pérez Roncero | Curriculum Vitae

C/Oña 17, 7º 2 – 28050 Madrid, Spain
+34 693 49 25 29 – arturo.perez.roncero@gmail.com
Website: https://arturoperezroncero.github.io/

1. Education

Universidad Complutense de Madrid **Madrid, Spain**

M.S. in Astrophysics 09/2024 - 06/2025

Relevant Subjects: *Astrophysics Experimental Techniques (9.6/10), Galactic Formation and Evolution (9/10), Stellar Atmospheres (8.3/10), Standard Model Cosmology.*

Master's Thesis (Score: 9.2/10): *In Search of the Traces of the Evolution of AGB Binary Stars and pPNe: A Study of Variability with TESS:*
Research of mechanisms behind brightness variability in AGB stars and pPNe, using TESS data via Python and Virtual Observatory tools. Study of new methods for flickering characterization in evolved stars (stochastic high-frequency brightness variability, possibly a tracer of binarity) using periodograms of short cadence light curves.

Master's Mean Score: 8.41/10

Universidad Complutense de Madrid **Madrid, Spain**

B.S. in Physics 09/2020 - 06/2024

Relevant Subjects: *Astrophysics (8.1/10), Extragalactic Astrophysics (9.2/10), Computational Physics (7.6/10), Cosmology (8.3/10), Differential Geometry (8/10), Quantum Physics II (10/10).*

Bachelor's *Thesis (Score: 8/10):* *Study of colour-magnitude diagrams with Gaia data:*
Study of Color-Magnitude diagrams using the Gaia Data Release 3. Isochrone fittings in Python of 6 different open clusters using Bayesian statistics, estimations of age, metallicity and distance.

Bachelor's Mean Score: 7.56/10

IES Ramiro de Maeztu **Madrid, Spain**

Double Baccalaureate: International Baccalaureate and Spanish Science Baccalaureate 09/2018 - 06/2020

Relevant Subjects: *Physics (7/7), Mathematics (6/7).*

Baccalaureate's *Thesis (Score: 10/10):* *Energy cost and flight time of an orbital maneuver: from Hohmann transfers to the Interplanetary Transport Network:*
Basic astronautics analysis of the Interplanetary Transport Network. Numerical simulations of Lyapunov orbits in the Earth-Moon system using Java.

Baccalaureate Mean Score: 8.65/10

Research experience:

Summer Research Intern – *with Dr.* ***Paulo Alberto Miles Páez***
CAB (Centro de Astrobiología), June–July 2025

- Analyzed CRIRES/VLT spectra to study H_3^+ auroral emission in brown dwarfs and planetary-mass objects.
- Gained experience in data reduction, Python-based spectral analysis, and substellar atmosphere physics.

Honors and Awards:

- **Aditus Scholarship**, excellence scholarship given to students applying to universities abroad.
- Secondary Education **Honorary Diploma.**
- 1st place in HP CodeWars Python tournament (2020).
- **Educational Enrichment Program** for Students with High Abilities of the Community of Madrid (PEAC).
- I have participated in numerous **Physics Olympiads**, and won several high school **science fairs**.

References:

Sánchez Contreras, Carmen
Master's Thesis Supervisor
Astrobiology Center (CAB)
Departamento de Astrofísica
csanchez@cab.inta-csic.es

Montes Gutiérrez, David
Bachelor's Thesis Supervisor
Universidad Complutense de Madrid
Departamento de Astrofísica
dmontes@ucm.es

Miles Páez, Paulo Alberto
Summer Internship Supervisor
Astrobiology Center (CAB)
Departamento de Astrofísica
pamiles@cab.inta-csic.es

2. Skills

Languages:

- Fluent in **English** (C2 Proficiency).
- Fluent in **Spanish** (native tongue).
- Basic knowledge of **French.**

Computer Skills:

- Fluent in **Python** and **Matlab.**
- Basic knowledge of **Java** and **C++.**
- Github repository with examples of physics simulations.
- Didactive stellar astrophysics Android App.
- Willingness to learn whatever language is necessary.
- Quick learner and accustomed to self-education.

Other Software:

- **Astronomical Software**: experienced in **TopCat**, **Aladin** and **VOSA**. Completed a virtual course in professional astronomical software conducted by the Spanish Virtual Observatory. I am familiar with **Gaia** and **TESS** data collection and handling.
- **Latex**: experienced in writing articles using Latex.
- **Blender**: extensive knowledge of 3D-modelling, texturing, and lighting.
- **Excel**: experienced in using cell sheets.
- **Adobe After Effects and Adobe Premiere**: experience in video editing and VFX.
- **Adobe Photoshop**: basic knowledge of image editing.

3. Teaching Experience

- **Lectures on astrophysics open to the public**, as part of the national "Science Week".
- **Math and Science lessons for high school students** (unpaid).
- **Programming lessons open to the public.**
- **Instructor in astronomy student-lead activities.**

4. Interests

- **Astronomy**: Educational YouTube Channel.
- **Sci-fi**: Avid reader of Greg Egan, Ian M. Banks and Arthur C. Clark. I write short stories of my own, some of which have won awards (please do ask, they are in English, and I would love to share them).
- **Digital Art**: I make sci-fi inspired scenes in Blender and other software. Artstation portfolio.
- **Music**: experienced drummer, member of Epsilon Mechanism, an alternative rock band based in Madrid. Guitarist and bassist.
- **Video Editing**: Conventional and AI VFX and editing. YouTube Channel.
- **Videogame development**: Available on Play Store.
- **Climbing** (V5), **Hiking** and **Badminton.**