

Hugo Alexandre

International Master's degree in Computational Physics, Master's degree in Subatomic Physics & Cosmology and Magister's degree in Physics

PhD Application - OCA

Academic Education and Diplomas

Master's degree in Computational Physics, UMLP (Besançon), 2024–now
Specialization in Machine Learning and Numerical Simulations.

Master's degree in Subatomic Physics & Cosmology, UGA (Grenoble), 2021–2023
Specialization in Cosmology, Astroparticles and Gravitational Waves.

Magister's degree in Physics - UGA (Grenoble), 2021–2023
Specialization in Research and Mathematics of General Relativity.

Bachelor's degree in Physics - UGA (Grenoble), 2018–2021

Research Passport University diploma - UGA (Grenoble), 2018–2019

Professional and Additional Experiences

M2 Internship at the OCA/ARTEMIS (Nice), 02/2025 - now
Inferring a Model of the Galaxy with Compact Binaries Observed by LISA

Supervised by Dr. Natalia KORSAKOVA

Contributing to the development of methods for inferring a model of the galaxy based on galactic binaries gravitational wave observations from the future LISA mission.

Visit to the Virgo Gravitational Wave Interferometer, 09/2024

I visited the Virgo interferometer for a documentary filming, guided by GW physicist Jérôme Degallaix. Having studied the detector, I was well-positioned to contribute and discuss its design and key characteristics with researchers.

Physics-Chemistry Teacher, 09/2023 - 08/2024

I worked as a full-time physics-chemistry teacher at a middle-school. I applied concepts from my studies to create numerical simulations, that provide more intuitive explanations.

YouTube Video Scriptwriter, 07/2023 - now

I write video scripts for Zebroloss (ESA partner) on astrophysics/cosmology and quantum mechanics and assist in documentary production. I also create simulations of physical phenomena, such as black hole dynamics, quantum tunneling etc. for his videos.

M2 Internship at the LAPP (Annecy), 02/2023 - 07/2023

Influence of Cosmology on the Gravitational Wave Background of Compact Binaries

Supervised by Pr. Tania REGIMBAU

Studying the impact of cosmological parameters (H_0 , Ω_M etc.), dark energy models, and star formation rates on the SGWB from CB within Λ -CDM and non- Λ -CDM models.

M1 Internship at APC Laboratory (Paris), 06/2022 - 08/2022

The Cosmic-Ray Boron-over-Carbon Ratio Observed by Voyager 1 Probe

Supervised by Pr. Stefano GABICI

Studied the cosmic-ray spallation of C, N, and O with protons in the interstellar medium and computed the Boron-to-Carbon abundance using analytical and numerical methods.

Participant in the 9th French Physicists' Tournament, 02/2022

As a "Team Member", I participated in the physics tournament held at ENSTA in Paris. During the event, I presented a research topic in English to a jury and opposing schools.

Creation and management of the 1minute2physique, (Tiktok), 01/2022 - now

Produce videos featuring numerical simulations, mathematical demonstrations, physics fun facts, and explanations of fundamental concepts in physics.

CONTACT



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COMPUTER SKILLS & TOOLS



Github

LANGUAGES



: Native Speaker



: B2/C1 Level