



Paolo Cremonese, Ph.D.
Researcher

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About me

I am a researcher with experience up to the Postdoctoral level, specialised in gravitational waves, with a strong background on data analysis. I have a passion for finance, technology, and continuous learning, complemented by a love for travel. I love tackling challenging problems and am now seeking to leverage my analytical skills and passion for innovation in a dynamic opportunity outside of academia, where I can combine my interests in finance and technology.

Skills

- Python - pandas, numpy, matplotlib, tensorflow, scikit-learn
- SQL
- Linux
- LaTeX
- Git
- HTML/CSS
- Mathematica
- Slurm - HTCondor

Languages

- Italian - Mother Tongue
- English - Fluent
- Spanish - Basics

Interests

- Technology
- Data Analysis
- Finance and Investments
- Sports, Books & Piano.

Work Experience

- 2022-2024 PostDoc Researcher** UIB, Palma, Spain
Data Scientist. Member of LIGO collaboration.
(i) I **developed models to analyze Gravitational Waves data**, focusing on finding events that are bent or magnified by massive objects (i.e. lensing). (ii) I worked on a project to organize and **automate the process of detecting these lensed events** more efficiently. (iii) I coded a **pipeline to automate the creation of setup files**, for cluster computing, for bayesian parameter estimation (PaoloCremo/runtomation).
- 2018 Internship as Data Scientist** DBA Group, Italy
I worked in a team focused on developing methods to record and analyse diverse datasets, ranging from meteorological to industrial data, **using machine learning techniques to predict outcomes and improve data-driven decision-making**

Education

- 2022 Ph.D. in Physics** Szczecin, Poland
Gravitational lensing of Gravitational Waves
- 2017 M.Sc. in Astronomy** Padova, Italy & Stockholm, Sweden
Thesis on lensing of gravitational waves done at Stockholm university
- 2015 B.Sc. in Astronomy** Padova, Italy
Thesis on dark matter in spiral galaxies

Projects

- #appdevelop #sideprojects I'm participating in a program by VAM, focused on developing AI-driven applications. I implement a full-stack AI solution while exploring Agentic LLMs, RAG, and prompt engineering. I'm also working on a fun project that lets control Spotify playlists (PaoloCremo/spotify) and building a bot to send daily updates of new research papers from ArXiv based on topics of interest (PaoloCremo/paperbot).
- #website I designed and coded my own website, where I keep my info, thoughts and different things (PaoloCremo/PaoloCremo.github.io).

Volunteering

- 2025 Partnerships Lead** Data For Good, Vancouver, Canada
I engage nonprofit organizations to identify their data needs, develop tailored strategies for impactful projects, and implement a CRM system to streamline client outreach and relationship management.

Main Publications

- #6 **Invariance transformations in wave-optics lensing: implications for gravitational-wave astrophysics and cosmology**
- #5 **Follow-up Analyses to the O3 LIGO-Virgo-KAGRA Lensing Searches**
- #4 **Characteristic features of Gravitational Wave lensing as probe of lens mass model**
- #3 **Breaking the mass-sheet degeneracy with gravitational wave interference in lensed events**

The complete list at inspirehep.net/authors/1859874

Conferences Presentations

- **"Mass-Sheet Degeneracy in Gravitational Wave Lensing"** @ NBI Strong Group seminar, 2023/12; LVK meeting, 2023/09
- **"Wave Optics in Gravitational Wave Lensing"** @ UBC Gravity seminar, 2023/09
- **Divulgate talk on Dark matter** @ YouTube, 2022/10
- **Presented paper #3** @ GWverse, 2021/09; Gravitex 2021, 2021/08; COSMO '21, 2021/08; Amaldi 14, 2021/07 Cosmology from Home, 2021/07; Ibericos 2021/04
- **Member of organizing committee** @ The 6th Conference of the Polish Society on Relativity, 2019/09

The complete list with slides and link to conferences at paolocremonese.com/CV