



Paolo Cremonese  
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
- LaTeX
- Git
- HTML/CSS
- SQL
- Mathematica
- Linux
- 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. (ii) I coded on a project to automate the process of studying 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 on developing methods to record and analyse diverse datasets, 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) I'm developing an iOS app to help manage personal finances — myFinances. It features an API connected to a SQL database, a backend written in C++ and Swift, and a frontend built with SwiftUI. (ii) I participated in a program by VAM, focused on developing AI-driven applications. I implemented a full-stack AI solution while exploring Agentic LLMs, RAG, and prompt engineering (project here). (iii) I developed Python software that manages Spotify playlists (PaoloCremo/spotify) and (iv) built 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