



Paolo Cremonese, Ph.D. Researcher



Vancouver, BC



paolocremonese.com



cremonesep25 [at] gmail.com



PaoloCremo

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

Mathematica

Slurm -

HTCondor

SQL

Linux

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 tools 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

- `#personalfinance` `#appdevelop` `#sideprojects` I'm developing a personalised mobile app to help manage personal finances. This includes creating a custom `Python` package to track expenses and investments. On the side, 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 Client Development Representative

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