

Francesca Gerardi

DATA SCIENTIST

16/07/1994 | CITIZENSHIP: ITALIAN

✉ fgerardi.uk@gmail.com | 🏠 frgerardi.github.io | 📧 frgerardi | 🌐 frgerardi | 📞 0000-0002-2743-244X

I just started my career as a Data Scientist, after gaining experience in Bayesian Inference and Machine-Learning during my PhD.

Skills and strengths

Programming

Python: Advanced
SQL: Intermediate
R: Basic
Fortran: Intermediate
C++: Basic
HTML: Basic

Operating Systems

Ubuntu, Windows, MacOS

Deep Learning

Tensorflow, Keras

Version control

git, Github,
Google internal tool

Bayesian Statistics

Simulation-based inference,
Nested Sampling,
MCMC, Stan (*pyStan*)

Editing

vim, Latex

Software

Google Workspace,
BigQuery, Looker Studio,
Microsoft Office, Power BI

Personal strengths

Self-motivated, Learner,
Persistent, Curious

Languages

Italian: Native
English: Fluent (CEFR C1)
French: Basic

Undergraduate Studies

Bachelor's Degree in Astronomy 105/110

Padua University, Padua, Italy (Oct 2013 - Sept 2016)

Doctoral Activities

- Organizer of Journal Club (2021-22)
- Organizer of PhDs discussion meetings (2020-21)

Extracurricular Activities

- Volunteer afterschool with foreign kids (2009)
- Private Maths and Physics classes (2015-2019)
- Animator in summer camp (*Summers 2007, 2012*)
- Articles writing for school website (2010-2012)
- Volleyball (2009-2014), one-year team captain

Personal Interests

Sport • Nature & cultural trips • Gaming • Loud classical and pop music • Art • Cooking and good food

Experience

Data Scientist @ Versace

Milan, IT

VERSACE IT

4 Sep 2023 - Ongoing

- Inventory and Demand Planning Dept.
- Assisting team members in forecasting and distribution operations, framing operational problems towards the deployment of data-driven solutions and the definition of more suitable mathematical/statistical analyses.
- Python, SQL • Google Cloud Platform, BigQuery • Power BI, Looker Studio, Excel

Data Science Intern @ Google

London, UK

GOOGLE UK

22 Aug - 25 Nov 2022

- I developed extensions to Natural Gradient Boosting ([github link](#)), a Machine-Learning algorithm for probabilistic regression. These were implemented in production-ready, unit-tested code and improved the performance of the ML model used by my host team by 10%
- Software and modules used: Python, version control (Google internal tools), numpy, matplotlib, scikit-learn, pandas, multiprocessing, Google Workspace

Teaching Assistant @ London Business School

London, UK

LONDON BUSINESS SCHOOL

Apr 2022 - Jun 2022

- Courses: 'Python for Finance', with exam marking
- Assisted students (~ 50/class) during lecture coding laboratories
- Software and modules used: Python, Spider, conda, numpy, pandas, seaborn

Postgraduate Education

PhD in Astrophysics [3.5yrs long]

London, UK

UCL, DEPARTMENT OF PHYSICS AND ASTRONOMY, COSMOPARTICLE INITIATIVE

Oct 2019 - Jul 2023

- Thesis work: "Simulation-based inference and data compression applied to cosmological problems"
- Bayesian statistics and data analysis applied to high dimensional problems and Big-Data in the context of Gravitational waves and Large Scale Structure science
- Simulation-based inference, Bayesian hierarchical modeling and Population-level inference
- Machine-learning, e.g. for data compression (regression) and probability density estimation
- **Data Intensive Science (CDT DIS) Project on Deepfakes** - colab. with NCC Group. Publication Link
- Software and modules used: Python, conda, Jupyter notebook, numpy, scipy, matplotlib, pandas, seaborn, scikit-learn, pingouin, getdist, mpi4py, multiprocessing, Tensorflow, Keras
- Access to supercomputer clusters NERSC (U.S. Energy Dept), Hypatia and Splinter (UCL)
- Member of DESI (Dark Energy Spectroscopic Instrument) International Collaboration since Dec 2021

Master's Degree in Astronomy: 110/110 cum laude

Padua, Italy

UNIVERSITÀ DEGLI STUDI DI PADOVA

Oct 2016 - Oct 2018

- Thesis work: "Non-parametric reconstruction of cosmological functions", **Erasmus+** in Leiden (NL)

Peer-Reviewed Journal Articles

- [2023] Francesca Gerardi, *et al.* Optimal data compression for Lyman- α forest cosmology. MNRAS, Volume 528, Issue 2, Feb 2024. [Link](#)
- [2022] Francesca Gerardi, *et al.* Direct cosmological inference from three-dimensional correlations of the Lyman α forest. MNRAS, Volume 518, Issue 2, Jan 2023. [Link](#)
- [2021] Francesca Gerardi, *et al.* Unbiased likelihood-free inference of the Hubble constant from light standard sirens. Phys. Rev. D, 104:083531, Oct 2021. [Link](#)
- [2019] Francesca Gerardi, *et al.* Reconstruction of the Dark Energy equation of state from latest data: the impact of theoretical priors. JCAP, 07:042, 2019. [Link](#)

