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EDUCATION

Ph.D. in Mathematical Statistics,
TU Delft.
Sep 2022 - current

M.Sc. Stochastics & Financial Mathematics (Mathematics),
Universiteit van Amsterdam.
grade: Cum Laude.
Sep 2020 - Aug 2022

B.Sc. Mathematics for Finance & Insurance (Mathematics),
Università degli studi di Torino.
grade: Cum Laude.
Sep 2017 - Aug 2020

LANGUAGES

Italian (native), English (C1 level certified), Spanish (C1 level certified), Dutch (B1 level).

Coding:

Python : numpy, scipy, pandas, seaborn, matplotlib, sklearn, PyMC3, PyBN, tkinter, jax, pytorch, tensorflow.

R : BNPmix, BNPdensity,DPpackage, isocir, limSolve.

PUBLICATIONS

Gili, F., Jongbloed, G. and van der Vaart, A. (2024).
Adaptive and Efficient Isotonic Estimation in Wicksell's Problem. Journal of Nonparametric Statistics, Taylor & Francis pp. 1-41.
https://doi.org/10.1080/10485252.2024.2397680

Gili, F., Jongbloed, G. and van der Vaart, A. (2024).
Asymptotically efficient estimation under local constraint in Wicksell's problem. Preprint:
https://arxiv.org/pdf/2410.14263

Francesco Gili

PROFILE

I am a quantitative researcher, with a specialization in statistical and probabilistic analysis. I have a background in mathematics with a focus on stochastics. My expertise lies in the application of statistical models to analyze random processes and probabilistic phenomena. I am currently pursuing a PhD in mathematical statistics under the supervision of Prof. dr. Aad van der Vaart and Prof. dr. Geurt Jongbloed at the TU Delft.

RELEVANT WORK EXPERIENCE

PhD Candidate, Sep 2022 - present, Delft.

I have been working on a classical inverse problem which has relevant applications in Astronomy and Stereology, called Wicksell problem. I tackled both the frequentist nonparametric approach, which lead to the publication of two articles and I am currently investigating the Bayesian nonparametric approach. I also published a Python package for the frequentist approach. I have recently started two project in proximal causal inference, a new approach to deal with unobserved confounding.

Research internship CWI, Jan 2022 - Aug 2022, Amsterdam.

The research project was embedded in the Machine Learning group and the focus was on the investigation of martingale methods for sequential analysis and learning. I demonstrated the power of certain statistical testing methods, also adapt for optional stopping and online learning settings.

Energy analyst internship, Jul 2021 - Sep 2022, Amsterdam.

Energy companies may have a low number of measurements in the lower part of the grid; during this research internship, we evaluated models for the estimation of consumption profiles, with the final objective of forecasting. To do so, I employed supervised and unsupervised machine learning, as well as time series analysis. I also improved the uncertainty quantification of the existing methods, influencing the porfolio management.

OTHER WORK EXPERIENCE

Teaching assistant UvA - VU, Sep 2022 - Aug 2022, Amsterdam.

I have been teaching assistant for master courses such as Stochastic Processes for Finance and Stochastic Integration (Mastermath - national course). Moreover, I have been Tutor for first year students.

Tutor UniTo, Nov 2018 - Jun 2019, Turin.

I was lecturer in the Project Digital Math Training and I would teach students how to use the multi-paradigm programming language Maple in order to solve mathematical problems.