Lorenzo Testa

Updated: January 14, 2025

PERSONAL INFORMATION

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RESEARCH INTERESTS

High-dimensional statistics; statistical stability; causal inference; functional data and network analysis

CURRENT POSITIONS

Ph.D. in Statistics and Data Science

2023–   Carnegie Mellon University, US

Ph.D. student in Statistics and Data Science · Department of Statistics and Data Science

2023–   Sant'Anna School of Advanced Studies, Italy

Junior research affiliate · L'EMbeDS Department

EDUCATION

Sant'Anna School of Advanced Studies, Italy

Master Diploma in Economics

→ 2020–2023 · Master Diploma in Economics and Management · Final grade: *100/100 cum laude* (highest honors)

Diploma in Economics

→ 2017–2020 · Diploma in Economics and Management · Final grade: *100/100 cum laude* (highest honors)

University of Pisa, Italy

M.Sc. in Data Science

→ 2020–2022 · Master of Science in Data Science · Final grade: *110/110 cum laude* (highest honors)

B.Sc. in Economics

→ 2017–2020 · Bachelor's degree in Economics · Final grade: *110/110 cum laude* (highest honors) and special mention · Graduated one semester ahead of the standard term

High school Diploma

2012-2017   Liceo Scientifico Filippo Lussana, Italy

Final grade: *100/100*

RESEARCH & PUBLICATIONS

*: equal contribution; ✉: correspondence

Preprints & Working papers

1. Testa, L., Klei, L., Devlin, B., Roeder, K.✉, MacDonald, M. L.✉ · Estimating protein isoform abundances with PAQu · Working paper (2025+)

2. Testa, L., Boschi, T., Chiaromonte, F., Kennedy, E. H., Reimherr, M. · Doubly-robust functional average treatment effect estimation · Working paper (2025+)

3. Boschi, T.*, Di Iorio, J.*, Testa, L.*, Cremona, M. A.✉, Chiaromonte, F.✉ · Contrasting pre-vaccine COVID-19 waves in Italy through Functional Data Analysis · Submitted (2025+)

Journal papers

4. Boschi, T.*, Testa, L.*, Chiaromonte, F.✉, Reimherr, M.✉ · FAStEN: an efficient adaptive method for feature selection and estimation in high-dimensional functional regressions · Journal of Computational and Graphical Statistics (2024) · Poster

5. Gortan, M., Testa, L., Fagiolo, G.✉, Lamperti, F.✉ · A unified dataset for pre-processed climate indicators weighted by gridded economic activity · Scientific Data 11, 533 (2024) · Dashboard

6. ESPOSITO, C.*, GORTAN, M.*, TESTA, L.*✉, CHIAROMONTE, F.✉, FAGIOLO, G., MINA, A., ROSSETTI, G. · Venture capital investments through the lens of network and functional data analysis · Applied Network Science 7, 42 (2022)

7. BOSCHI, T., DI IORIO, J., TESTA, L., CREMONA, M. A.✉, CHIAROMONTE, F.✉ · Functional data analysis characterizes the shapes of the first COVID-19 epidemic wave in Italy · Scientific Reports 11, 17054 (2021)

Book chapters & Conference proceedings

8. GORTAN, M.*, TESTA, L.*, FAGIOLO, G.✉, LAMPERTI, F.✉ · Climate impact assessment requires weighting: introducing the Weighted Climate Dataset · NeurIPS Workshop on Tackling Climate Change with Machine Learning (2024) · Poster

9. ESPOSITO, C.*, GORTAN, M.*, TESTA, L.*✉, CHIAROMONTE, F., FAGIOLO, G., MINA, A., ROSSETTI, G. · Can you always reap what you sow? Network and functional data analysis of venture capital investments in health-tech companies · Proceedings of the 10th International Conference on Complex Networks and Their Applications (2022)

10. PAPA, S., ROSI, B., TESTA, L.✉, VASELLI, F., ROSSETTI, G. · Inequality in the menu: how a network of restaurants characterizes social disparities in Boston · Book of Abstracts of the 10th International Conference on Complex Networks and Their Applications (2022)

FELLOWSHIPS & SCHOLARSHIPS

2017–2022 · Sant'Anna School of Advanced Studies, Italy

Competitive honors program ($\approx$ 5% admission rate) · 5-year full government-funded scholarship (housing, canteen, travel grants), honor courses, yearly dissertations, language studies and GPA requirements

TEACHING

Teaching assistant

2024 · *36-226: Introduction to statistical inference* · Carnegie Mellon University

2023 · *36-401: Modern regression* · Carnegie Mellon University

2022 · *Statistics* (undergraduate level) · University of Pisa

2021 · *Macroeconomics* (undergraduate level) · University of Pisa

Recitations

2023 · *Statistical learning and large data, module 2* (undergraduate level) · Sant'Anna School of Advanced Studies

2022 · *Applied Statistics* (undergraduate level) · Sant'Anna School of Advanced Studies

EXCHANGE PERIODS

Visiting periods

2021 · Visiting scholar · Department of Statistics, Eberly College of Science, The Pennsylvania State University, US

2019 · Erasmus student · Department of Business and Economics, University of Galway, Ireland

2016 · Exchange student · Recognition of "*academic excellence*" · Urrbrae High School, Australia

Summer schools

2023 · *Climate Change and Machine Learning* · Climate Change AI

2021 · *Regularization Methods for Machine Learning* · University of Genova, Italy

2020 · *Economic Networks* · University of Oxford, UK

2019 · *Data Science* · Scuola Normale Superiore, Italy

WORK EXPERIENCE

Junior expert — *2023* · Processing and analysis of household surveys, climate, and conflict data · Alliance Biodiversity – CIAT, CGIAR

Research assistant — *2022–2023* · The Weighted Climate Dataset Dashboard · Sant'Anna School of Advanced Studies

Data analyst — *2020–2021* · Analysis of COVID-19 chat bot textual data · Tuscany Regional Medical Service, USL Toscana Nord-Ovest, Italy

TALKS & POSTERS

Invited talks — *December 2024* · COVID-19 in Italy: Contrasting pre-vaccine epidemic waves through Functional Data Clustering · 18th International Joint Conference CFE-CMStatistics, London, UK

April 2022 · Trajectories towards success: characterizing venture capital investment networks · ICHEC Brussels Management School, Belgium

Contributed talks — *December 2024* · Estimating protein isoform abundances with PAQu · IMS International Conference on Statistics and Data Science (ICSDS), Nice, France

December 2024 · Climate impact assessment requires weighting: introducing the Weighted Climate Dataset · NeurIPS Workshop on Tackling Climate Change with Machine Learning, Vancouver, Canada · Poster

December 2022 · FAStEN: efficient feature selection and estimation in functional regressions · IMS International Conference on Statistics and Data Science (ICSDS), Florence, Italy · Poster

Lab meetings — *October 2024* · Protein abundance quantification with PAQu · Carnegie Mellon University, US

Informative presentations — *October 2024* · Building interactive data apps with Python: a gentle introduction to Streamlit · StatBytes, Carnegie Mellon University, US · Tutorial

November 2022 · Next Generation Functional Data Analysis · Rotary Club Fiesole, Italy

OTHER INFORMATION

Coding — C · LaTeX · Python · R · SQL

Editorial work — Journal referee for *Applied Network Science* · *Statistics in Medicine*

Memberships — American Statistical Association · Institute of Mathematical Statistics · Royal Statistical Society

Service — *2020–2022* · Honors students' representative in the Board of the Social Sciences academic class · Sant'Anna School of Advanced Studies

2020–2021 · Member of honors students' financial statement committee · Sant'Anna School of Advanced Studies

2018–2020 · Member of honors students' public relations committee · Sant'Anna School of Advanced Studies