

Luca Masserano

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EDUCATION

Carnegie Mellon University, PhD in Statistics and Machine Learning Aug 2020 – May 2025 (Expected)
Joint PhD Program between the Machine Learning and Statistics Departments
Advisors: Ann B. Lee, Barnabás Póczos

Bocconi University, M.Sc. in Data Science Sep 2018 – Jul 2020
GPA: 29.3/30, Final Grade: 110/110 *cum laude*

Università Cattolica del Sacro Cuore, B.Sc. in Quantitative Methods for Economics Sep 2015 – Sep 2018
GPA: 29.2/30, Final Grade: 110/110 *cum laude*

EXPERIENCE

Carnegie Mellon University, Doctoral Researcher Aug 2020 – present

- **Robust uncertainty quantification in simulation-based inference:** I am working on developing new methods with sound statistical guarantees that can be used in several domains of science to quantify the uncertainty around parameters of interest. This is a key problem for scientific inference, where the goal is often to constrain parameters that govern complex (and intractable) data-generating processes. Partially supported by NSF (grant #2020295).

Amazon (AWS AI Labs), Machine Learning Scientist Intern Jun 2023 – Aug 2023

- **Project:** End-to-end Learning of Mixed-Integer Programs via Stochastic Perturbations.
Offered to return for another internship in 2024.

Amazon (AWS AI Labs), Machine Learning Scientist Intern Jun 2022 – Aug 2022

- **Project:** Adaptive Sampling for Probabilistic Forecasting Under Distribution Shifts.
Offered to return for another internship in 2023.

BlackRock, Quantitative Analyst Intern Jul 2019 – Sep 2019

- **Project:** Development of a research platform to analyze the effect of modifications in a suite of equity risk models.
Offered to return full-time in 2020.

SmartFAB, Data Scientist Intern Mar 2019 – May 2019

- **Project:** Real-time detection of damaged integrated circuits produced in a semiconductor plant.

PUBLICATIONS AND PREPRINTS

Masserano, L., Rangapuram, S., Stella L., Benidis K., Rosolia U., Bohlke-Schneider, M. (2023) *End-to-end Learning of Mixed-Integer Programs via Stochastic Perturbations*. In preparation.

Masserano, L., Dorigo, T., Izbicki, R., Kuusela, M., Lee, A. (2022) *Simulation-Based Inference with Waldo: Confidence Regions by Leveraging Prediction Algorithms or Posterior Estimators for Inverse Problems*. Accepted at AISTATS 2023.

Masserano, L., Rangapuram, S., Kapoor, S., Nirwan, R.S., Park, Y., Bohlke-Schneider, M. (2022) *Adaptive Sampling for Probabilistic Forecasting under Distribution Shifts*. Accepted at NeurIPS 2022 DistShift Workshop.

Masserano, L., Dorigo, T., Izbicki, R., Kuusela, M., Lee, A. (2022) *Likelihood-Free Frequentist Inference for Calorimetric Muon Energy Measurement in High-Energy Physics*. Accepted at NeurIPS 2022 ML for Physical Sciences Workshop.

Dalmasso, N.^{*}, **Masserano, L.**^{*}, Zhao, D., Izbicki, R., Lee, A. (2021) *Likelihood-Free Frequentist Inference: Confidence Sets with Correct Conditional Coverage*. ^{*}Equal contribution. Under review (Journal).

COMPUTER SKILLS AND LANGUAGES

CODING: Python (1f2i package developer), R, C++ (beginner), Bash, L^AT_EX, Git

LANGUAGES: Italian (native), English (fluent), Spanish (intermediate)

ADDITIONAL EXPERIENCE

Teaching Assistant at Carnegie Mellon University

- Computing TA: helping PhD students and faculty with research-related computing needs
- STAT 36401 - Modern Regression (Head TA in Fall 2021)
- STAT 36462 - Statistical Machine Learning

AWARDS

Student paper award by the American Statistical Association, Section on Physical Sciences Jan 2023
SBI with WALDO: Confidence Regions by Leveraging Prediction Algorithms or Posterior Estimators

SELECTED TALKS

AISTATS Valencia, Spain
SBI with WALDO: Confidence Regions by Leveraging Prediction Algorithms or Posterior Estimators April 2023

NeurIPS - Machine Learning and the Physical Sciences Workshop New Orleans, LA
Likelihood-Free Frequentist Inference for Calorimetric Muon Energy Measurement in High-Energy Physics Dec 2022

NeurIPS - Distribution Shifts Workshop New Orleans, LA
Adaptive Sampling for Probabilistic Forecasting under Distribution Shift Dec 2022

ML4Jets Rutgers University, Piscataway, NJ
SBI with WALDO: Confidence Regions by Leveraging Prediction Algorithms or Posterior Estimators Nov 2022

Joint Statistical Meetings (JSM) Washington, D.C.
SBI with WALDO: Confidence Regions by Leveraging Prediction Algorithms or Posterior Estimators Aug 2022

5th Inter-experiment Machine Learning (IML) Workshop CERN, Geneva, Switzerland
SBI with WALDO: Confidence Regions by Leveraging Prediction Algorithms or Posterior Estimators May 2022

EXTRACURRICULAR ACTIVITIES

Professional Soccer Player

I played as goalkeeper from 2012 to 2015 in the third division in Italy. I stopped due to an injury.