

# Luca Masserano

Email: [lmassera@andrew.cmu.edu](mailto:lmassera@andrew.cmu.edu)

Website: <https://lucamasserano.github.io/>

## 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.

Dalmaso, N.<sup>\*</sup>, **Masserano, L.**<sup>\*</sup>, Zhao, D., Izbicki, R., Lee, A. (2021) *Likelihood-Free Frequentist Inference: Confidence Sets with Correct Conditional Coverage*. <sup>\*</sup>Equal contribution. Under review (Journal).

## COMPUTER SKILLS AND LANGUAGES

**CODING:** Python, R, Bash,  $\text{\LaTeX}$ , 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.