

# MARIA LAURA BATTAGLIOLA

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✉ Av. Miguel Ángel de Quevedo 599, 04320    📍 San Francisco, Coyoacán, Mexico City  
ORCID: 0009-0008-0278-233X    H-index: 2

## EDUCATION

### University of Copenhagen

📍 Copenhagen, Denmark

📅 Awarded in 2021

### Ph.D. in Statistics

Doctoral Thesis: *Quantile Regression for Scalar and Functional Clustered Data and Data Analysis with Phase-Amplitude Separation*

Supervisors: Prof. Helle Sørensen and Prof. Ana-Maria Staicu (North Carolina State University)

### Politecnico di Milano

📍 Milan, Italy

📅 Awarded in 2017

### M.Sc. in Mathematical Engineering, Specialization in Applied Statistics

Master's Thesis: *A Nonparametric Local Method for Inference on Functional Time Series and Its Application to Bike Sharing Data*

Supervisors: Prof. Simone Vantini, Prof. Alessia Pini, Prof. Helle Sørensen (University of Copenhagen)

Grade: 108/110

### Politecnico di Milano

📍 Milan, Italy

📅 Awarded in 2014

### B.Sc. in Mathematical Engineering

## ACADEMIC POSITIONS

### Instituto Tecnológico Autónomo de México (ITAM)

📍 Mexico City, Mexico

📅 Aug 1, 2024 – Present

### Assistant Professor C (Tenure Track)

Department of Statistics

### École Polytechnique Fédérale de Lausanne (EPFL)

📍 Lausanne, Switzerland

📅 Oct 1, 2021 – May 31, 2024

### Postdoctoral Researcher

Statistical Data Science Laboratory, Department of Mathematics

### University of Copenhagen

📍 Copenhagen, Denmark

📅 Aug 1, 2021 – Aug 31, 2021

### Research Assistant

Section of Statistics and Probability Theory, Department of Mathematical Sciences

## LONG-TERM RESEARCH VISITS

### Columbia University

📍 New York, NY, USA

📅 Oct 2019 – Dec 2019

### Visiting Researcher

Visiting student under Prof. Todd R. Ogden, Department of Biostatistics

### North Carolina State University

📍 Raleigh, NC, USA

📅 May 2018, Oct 2018

### Visiting Researcher

Visiting student under Prof. Ana-Maria Staicu, Department of Statistics

### University of Copenhagen

📍 Copenhagen, Denmark

📅 Mar 2017 – Jun 2017

### Visiting Researcher

Master's visiting student under Prof. Helle Sørensen, Department of Mathematical Sciences

## GRANTS AND FUNDING

École Polytechnique Fédérale de Lausanne

📍 Lausanne, Switzerland

📅 2023

Bernoulli Center for Fundamental Studies Grant

**Amount:** CHF 23,000

**Purpose:** Funding for the *Discrete Random Structures Workshop* (<https://drs23.epfl.ch/workshop-on-discrete-random-structures/>)

**Role:** Organizer with Dr. Anda Skeja (Uppsala University)

## INTERNATIONAL COLLABORATIONS

- Prof. Hansjörg Albrecher, University of Lausanne, Switzerland
- Prof. Jan O. Bauer, Vrije Universiteit Amsterdam, Netherlands
- Prof. Martin Bladt, University of Copenhagen, Denmark
- Prof. Shane Elipot, University of Miami, USA
- Dr. Jake Grainger, EPFL, Switzerland
- Prof. Joseph Guinness, Washington University in St. Louis, USA
- Prof. Todd R. Ogden, Columbia University, USA
- Prof. Sofia C. Olhede, EPFL, Switzerland
- Prof. Helle Sørensen, University of Copenhagen, Denmark
- Prof. Ana-Maria Staicu, North Carolina State University, USA
- Prof. Jorge Yslas, University of Liverpool, UK

## PRESENTATIONS

- *Localized Functional Principal Component Analysis and Identification of Compactly-Supported Functional Processes*. Invited talk at CIMAT, Guanajuato, February 2025.
- *Extremile Scalar-on-Function Regression with Application to Climate Scenarios*. Invited talk at CMStatistics 2024, London, December 2024.
- *Flexible and Efficient Simulation of Spatio-Temporal Processes with Advection*. Contributed talk at Joint Statistical Meetings, Toronto, August 2023.
- *Flexible and Efficient Simulation of Spatio-Temporal Processes with Advection*. Invited talk at CNRS-Imperial Workshop on Waves and Imaging, London, March 2023.
- *Quantile Regression for Longitudinal Functional Data with Application to Feed Intake of Lactating Sows*. Invited talk at CMStatistics 2022, London, December 2022.
- *Modeling Learning Curves of Mice*. Presentation to the Functional Data Analysis Unit at Columbia University, New York, December 2019.
- *A Bias-Adjusted Estimator in Quantile Regression for Clustered Data*. Presentation to the Functional Data Analysis Unit at Columbia University, New York, October 2019.
- *Quantile Regression for Longitudinal Data*. Presentation to the Section of Statistics and Probability at the University of Copenhagen, November 2018.
- *Quantile Regression for Longitudinal Data*. Poster session at Data Science Summer School, Paris, June 2018.

## REVIEWER FOR JOURNALS

Canadian Journal of Statistics

Biostatistics

Scandinavian Journal of Statistics

## LANGUAGES

- **English:** Full Professional Proficiency
- **Italian:** Native Speaker
- **Spanish:** Professional Competence
- **Danish:** Elementary Proficiency
- **French:** Elementary Proficiency

## SOFTWARE SKILLS

R

Python

C/C++

Matlab

## PUBLICATIONS

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### Published or Submitted

- M. L. Battagliola, H. Sørensen, A. Tolver, and A.-M. Staicu.  
**A Bias-Adjusted Estimator in Quantile Regression for Clustered Data.**  
*Econometrics and Statistics*, Volume 23, Pages 165–186, 2022.  
<https://doi.org/10.1016/j.ecosta.2021.07.003>
- M. L. Battagliola, H. Sørensen, A. Tolver, and A.-M. Staicu.  
**Quantile Regression for Longitudinal Functional Data with Application to Feed Intake of Lactating Sows.**  
*Journal of Agricultural, Biological and Environmental Statistics*, 2024.  
<https://doi.org/10.1007/s13253-024-00601-5>
- M. L. Battagliola and S. C. Olhede.  
**A New Class of Realistic Spatio-Temporal Processes with Advection and Their Simulation.**  
Preprint, 2023.  
Available at <https://arxiv.org/abs/2303.02756>
- M. L. Battagliola and M. Bladt.  
**Extremile Scalar-on-Function Regression with Application to Climate Scenarios.**  
Preprint, 2024.  
Available at <https://arxiv.org/abs/2405.20817>
- H. Albrecher, M. L. Battagliola, M. Bladt, A. J. A. Müller, and T. Swierczynski.  
**Flood Occurrence in the European Alps: A Generalized Additive Mixed Model Approach Based on Lake Sediments of the last 1500 Years.**  
Preprint, 2024.  
Available at <https://www.researchgate.net>
- Y. Fahmy, M. L. Battagliola, and J. Guinness  
**Estimating Velocity Vector Fields Using Transport Gaussian Processes.**  
Preprint, 2025.  
Available at <https://arxiv.org/abs/2505.10898>
- M. L. Battagliola and J. O. Bauer.  
**Localized Functional Principal Component Analysis based on Covariance Structure.**  
Preprint, 2025.  
Available at <https://arxiv.org/abs/2506.02836>

### In Progress

- M. L. Battagliola, S. Elipot, J. P. Grainger, and S. C. Olhede.  
**Isotropic Spectral Estimation Applied to Oceanic Currents Velocities** (Expected submission: August 2025).
- M. L. Battagliola and M. Bladt.  
**General Sampling of Copulas with Dirichlet Processes.**
- M. L. Battagliola, R. T. Ogden, and S. Zhang  
**Analysis of Learning Curves of Mice: A Functional Approach based on Alignment.**
- M. L. Battagliola and J. Yslas.  
**Anomaly Detection for Functional Data.**

### Software Contributions

#### R Package

LauraBattagliola/ExtrFunReg: ExtrFunReg package (v0.0.2), 2024.  
Available at <https://doi.org/10.5281/zenodo.11400425>