Paolo Onorati

Last updated on: Jan 2025

Postdoctoral Researcher

Personal Information

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GitHub: /github.com/paonrt

Current Position: Postdoctoral Researcher, Department of Statistical Sciences, University of Padua (Italy)

Research Interests: Asymmetric Distributions, Bayesian Inference, Classification, Copula Distributions, Extreme Values, Statistical Computing, and Time Series Analysis

Education

- **Ph.D in "Models for Economics and Finance "** — *Nov 2019 – Jun 2023*
  Sapienza University of Rome — Rome, Italy
  - Thesis: *"Bayesian Inference for Binary Regression Model and Hierarchical Copula Model"*
  - Supervisor: Prof. Brunero Liseo
  - Grade: Excellent cum laude
- **Master Degree in "Finanza e Assicurazione" (Finance and Insurance)** — *Oct 2016 – Jan 2019*
  Sapienza University of Rome — Rome, Italy
  - Grade: 110/110 cum laude
- **Bachelor Degree in "Scienze Aziendali" (Economics and Business)** — *Sep 2013 – Dec 2016*
  Sapienza University of Rome — Rome, Italy

Work Experience

- **Analyst at Deloitte** — *Jun 2019 – Oct 2019*
  Deloitte Consulting S.r.l. — Milan, Italy
  - Consultant for Over-the-Counter (OTC) derivative operations at Intesa San Paolo Bank
  - Focus on ensuring compliance with US regulation (Dodd-Frank Act, DFA) and Hong Kong regulation (Hong Kong Monetary Authority, HKMA)
  - Development and maintenance of a tool for the automatic generation of reports on the compliance of OTC derivative operations

Academic Experience

Research Experience

- **Postdoctoral Researcher at University of Padua** — *Jan 2024 – Curr*
  Department of Statistical Sciences — Padua, Italy
  - Winner of a competitive selection procedure for a research grant financed within the framework of project *Rethinking and Innovating Statistics for Extremes (RISE)*, code 2022FJ3SLA
  - Supervisor: Prof. Antonio Canale
- **Visiting Postdoc at University of Toronto** — *Oct 2023 – Dec 2023*
  Department of Statistical Sciences — Toronto, Canada
  - Development of Bayesian computational methods for copula distributions and stochastic population dynamics in presence of sampling errors
  - Supervisor: Prof. Radu Craiu
- **Postdoctoral Researcher at Sapienza University of Rome** — *Nov 2022 – Oct 2023*
  MEMOTEF Department — Rome, Italy
  - Winner of the competitive selection procedure 03/2022 - Cat. B - TIPO I - SECS-S/01 for the research project *Bayesian Generalized Linear Mixed Models with Applications in Demography and Official Statistics*
  - Supervisor: Prof. Brunero Liseo

Teaching Experience

- **Adjunct Professor at University of Padua** *Sep 2024 – Jan 2025*
  Department of Statistical Sciences Padua, Italy
  - Winner of the competitive selection procedure CR 799 10/06/2024 for the co-teaching of the course Statistica 2 Matricole Dispari (Statistical Inference)
  - Co-teaching with Prof. Antonio Canale; lectures in Italian
- **Teaching Assistant at Sapienza University of Rome** *Sep 2024 – Curr*
  MEMOTEF Department Rome, Italy
  - Winner of the competitive selection procedure 178/2024 for teaching activities and tutoring within the disciplinary scientific sector SECS-S/01 (Statistics)
  - Statistics pre-course for new students enrolled in the master's program; lectures in English
- **Teaching Assistant at Sapienza University of Rome** *Sep 2023 – Dec 2023*
  MEMOTEF Department Rome, Italy
  - Winner of the competitive selection procedure 1132/2023 for teaching activities and tutoring within the disciplinary scientific sector SECS-S/01 (Statistics)
  - Statistics pre-course for new students enrolled in the master's program; lectures in English
- **Lecturer for Ph.D Course in "Management Banking, and Commodity Sciences"** *Apr 2023 – May 2023*
  Department of Management, Sapienza University of Rome Rome, Italy
  - Lecturer of the course "Metodologia della RICERCA - Tecniche QUANTITATIVE con esercitazioni" (Research Methodology - Quantitative Techniques with Tutorials)
  - Although the course title was in Italian, the lectures were delivered in English
  - Co-teaching with Prof. Brunero Liseo and Prof. Nina Deliu
- **Teaching Assistant at Sapienza University of Rome** *Feb 2022 – Dec 2022*
  MEMOTEF Department Rome, Italy
  - Winner of the competitive selection procedure 1296/2021 for teaching activities and tutoring within the disciplinary scientific sector SECS-S/01 (Statistics)
  - Additional statistics course and tutoring for students who failed the exam; lectures in Italian
- **Teaching Assistant at Sapienza University of Rome** *Feb 2021 – Oct 2021*
  MEMOTEF Department Rome, Italy
  - Winner of the competitive selection procedure 1223/2020 for teaching activities and tutoring within the disciplinary scientific sector SECS-S/01 (Statistics)
  - Additional statistics course and tutoring for students who failed the exam; lectures in Italian
- **Teaching Assistant at Sapienza University of Rome** *Mar 2020 – Dec 2020*
  MEMOTEF Department Rome, Italy
  - Winner of the competitive selection procedure 80/2020 for teaching activities and tutoring within the disciplinary scientific sector SECS-S/06 (Mathematical methods of economics, finance, and actuarial sciences)
  - Additional mathematics course and tutoring for students who failed the exam; lectures in Italian

Publications

Journal Articles

Published

2024 **P. Onorati** and B. Liseo. An extension of the unified skew-normal family of distributions and its application to Bayesian binary regression. *Journal of Computational and Graphical Statistics*, (just-accepted):1–25, 2024a

2023 **P. Onorati**. An acceptance-rejection algorithm for the Kolmogorov distribution. *Annali del Dipartimento di Metodi e Modelli per l'Economia, il Territorio e la Finanza*, pages 11–25, 2023. ISSN 2385-0825. doi: 10.13133/2611-6634/1412

2022 **P. Onorati** and B. Liseo. Bayesian hierarchical copula models with a Dirichlet-Laplace prior. *Stats*, 5(4): 1062–1078, 2022b. ISSN 2571-905X

2019 **P. Onorati** and B. Liseo. Copule condizionate: applicazione nel calcolo del value-at-risk (conditional copulas: Application in value-at-risk computation). *Annali del Dipartimento di Metodi e Modelli per l'Economia, il Territorio e la Finanza*, pages 73–91, 2019. ISSN 2385-0825

Under Review

- **P. Onorati** and A. Canale. A semi-parametric bayesian spatial model for rainfall events in geographically complex domains. *arXiv:2501.08748*, a

In Preparation

- **P. Onorati**, S. Ruiz Suarez, and R.V. Craiu. Bayesian inference for the Gompertz model reveals population dynamics. b
- **P. Onorati** and B. Liseo. New class of modified Gaussian processes for Bayesian nonparametric binary regression. c
- **P. Onorati**, I. Antoniano-Villalobos, and A. Canale. Tuning-free objective Bayesian inference for extremes. d
- **P. Onorati** and R.V. Craiu. A rejection free markov chain Monte Carlo algorithm for copula models. e

Conference Proceedings

2024 **P. Onorati** and B. Liseo. An importance sampling algorithm for Bayesian logistic regression with scale mixture of Gaussian priors. In *Statistical Learning, Sustainability and Impact Evaluation Selected papers of the International Meeting SIS 2023*, 2024b. Accepted for publication, in press

2022 **P. Onorati** and B. Liseo. An importance sampling algorithm for Bayesian logistic regression with independent Gaussian scale mixture prior. In *Book of Short Papers SIS 2023*, 2023

2023 **P. Onorati** and B. Liseo. Bayesian hierarchical copula model for clusters of financial time series. In *Book of Abstracts MAF 2022*, 2022a

Conference Presentations

2024 18th International Joint Conference on Computational and Financial Econometrics (CFE-CMStatistics 2024)

King's College London, London, United Kingdom, 14–16 Dec 2024

Title: Tuning-free objective Bayesian inference for extremes

Invited talk

2024 52nd Scientific Meeting of the Italian Statistical Society (SIS 2024)

University of Bari Aldo Moro, Bari, Italy, 17–20 Jun 2024

Title: A Semi-Parametric Spatial Model for Weibull Distributions with Application to Extreme Rainfall Events

Contributed talk

2023 International Meeting SIS 2023 (SIS 2023)

University of Bari Aldo Moro, Bari, Italy, 17–20 Jun 2024

Title: An Importance Sampling Algorithm For Bayesian Logistic Regression with Independent Gaussian Scale Mixture Prior

Contributed talk

2022 10th International Conference on Mathematical and Statistical Methods for Actuarial Sciences and Finance (MAF 2022)

University of Salerno, Salerno, Italy, 20–22 Apr 2022

Title: Bayesian Hierarchical Copula Models for Financial Clusters

Contributed talk

2024 2024 ISBA World Meeting (ISBA 2024)

Ca'Foscari University of Venice, Venice, Italy, 01–07 Jul 2024

Title: Modified Gaussian Processes for Nonparametric Binary Regression

Poster presentation

2022 O'Bayes 2022: Objective Bayes Methodology Conference (OBayes 2022)

University of California Santa Cruz, Santa Cruz, CA, USA, 06–10 Sep 2022

Title: Bayesian Semi-Parametric Inference for Binary Regression

Poster presentation

Workshops and Seminars

2024 XIV Giornate della Ricerca Memotef 2024 (14-th Memotef Research Day 2024)

Sapienza University of Rome, MEMOTEF Department, Rome, Italy, 26–27 Mar 2024

Title: Modified Gaussian processes for nonparametric binary regression

Workshop presentation

2022 XII Giornate della Ricerca Memotef 2022 (12-th Memotef Research Day 2022)

Sapienza University of Rome, MEMOTEF Department, Rome, Italy, 31 May–01 Jun 2022

Title: Bayesian Binary Regression

Workshop presentation

2023 Department of Statistical Sciences, University of Toronto

Toronto, Canada, 12 Dec 2023

Title: An Extension of the Unified Skew-Normal Family of Distributions and Application to Bayesian Binary Regression

Brown Bag Seminar

Awards and Competitive Grants

2024 Honorable Mention for "Premio per la migliore tesi di dottorato in statistica" (Best Ph.D. Thesis in Statistics Award)

Società Italiana di Statistica - SIS (Italian Statistical Society)

Honorable Mention for the Ph.D. thesis "Bayesian Inference for Binary Regression Model and Hierarchical Copula Model"

2024 Best Poster Award at the 2024 ISBA World Meeting

International Society for Bayesian Analysis - ISBA

Poster title: Modified Gaussian Processes for Nonparametric Binary Regression

2022 Travel Grant for the Objective Bayes Methodology Conference (OBayes 2022)

Objective Bayes Section of the International Society for Bayesian Analysis - ISBA

Travel support for the participation in the conference OBayes 2022

2022 Avvio alla Ricerca (Initiation to Scientific Research)

Sapienza University of Rome

Winner of the competitive selection procedure D.R.n. 1418/2022 for research funding (Nov 2022)

Project title: An Extension of the Unified Skew-Normal Family of Distributions and Applications to the Bayesian Binary Regression Model

Referee Activities

- Environmental and Ecological Statistics
- Statistical Methods & Applications
- Communications in Statistics - Simulation and Computation

Skills

Programming Languages: R (advanced), C (basic), MATLAB (basic)

Markup Languages: LaTeX(advanced), Markdown (basic)

Other Softwares: Slurm as User (intermediate), Linux (basic-intermediate), Git (basic), Singularity (basic)

Languages: Italian (native), English (B2 level)