

# Cristian Castiglione

📍 Milan, Italy    ✉ cristian\_castiglione@libero.it    ☎ +39 340 215 37 84    🔗 cristiancastiglione.github.io  
🆔 0000-0001-5883-4890    🌐 CristianCastiglione    🐙 CristianCastiglione

## Research interests

Bayesian Statistics, Computational Statistics, Spatial Statistics, Mixed and Additive Models.

## Current position

### Postdoctoral research fellow

Bocconi University, Bocconi Institute for Data Science and Analytics (BIDSA)  
Project: *Causes of deAth dependence stRuctures and the cOMpositioNal effect on ovErall mortality (CARONTE)*  
Advisor: Prof. Daniele Durante

Milan, Italy  
Apr 2024 – Present

## Past academic positions

### Postdoctoral research fellow

University of Padua, Department of Statistical Sciences  
Project: *Statistical methods and models for the integration of multiomic data*  
Advisor: Prof. Davide Risso

Padua, Italy  
Feb 2023 – Apr 2024

## Education

### Ph.D. University of Padua, Department of Statistical Sciences

Course: Statistical Sciences  
Thesis: *Approximate inference for misspecified additive and mixed models*  
Advisors: Prof. Mauro Bernardi  
Co-advisors: Prof. Laura M. Sangalli, Prof. Alessio Farcomeni

Padua, Italy  
Oct 2019 – May 2023

### M.S. University of Padua, Department of Statistical Sciences

Course: Statistical Sciences  
Thesis: *Dynamic quantile models for spatio-temporal data*  
Advisor: Prof. Mauro Bernardi  
Final mark: 110/110 cum Laude

Padua, Italy  
Oct 2016 – Nov 2018

### B.S. University of Padua, Department of Statistical Sciences

Course: Statistics, Economics and Finance  
Thesis: *Multistate models for competing risks*  
Advisor: Prof. Giuliana Cortese  
Final mark: 110/110

Padua, Italy  
Oct 2013 – Jul 2016

## Work experience

Blue BI S.R.L., Junior consultant in business intelligence and analytics

Vicenza, Italy  
Jan 2019 - Sep 2019

## Awards and scholarship

ISBA travel award at ISBA 2022 world meeting.

Montreal, Canada  
Jun 2019

## Skills and technologies

---

**Languages:** Italian (native), English (good)

**Programming:** R (advances), Python (advanced), Julia (advanced), C++ (advances), Matlab (basic)

**Database:** MySQL (basic)

**Markup:** LaTeX (advanced)

## Publications

---

### Published articles


**Castiglione, C.**, Arnone, E., Bernardi, M., Farcomeni, A., Sangalli, L.M. (2024)

PDE-regularised spatial quantile regression

*Journal of Multivariate Analysis* (in press)

Sottosanti, A., Risso, D., **Castiglione, C.** (2022)


Contributed discussion: “Bayesian Nonstationary and Nonparametric Covariance Estimation for Large Spatial Data” by Kidd B. and Katzfuss M.

*Bayesian Analysis*, 17(1): 337–339. ([link](#) )

### Manuscripts

**Castiglione, C.**, Bernardi, M. (2024+)

Bayesian non-conjugate regression via variational message

[arxiv.org/abs/2206.09444](https://arxiv.org/abs/2206.09444) 

**Castiglione, C.**, Segers, A., Clement, L. and Risso, D. (2024+)

Stochastic gradient descent estimation of generalized matrix factorization models with application to single-cell RNA sequencing data

### Conference proceedings

**Castiglione, C.**, Arnone, E., Bernardi, M., Farcomeni, A., Sangalli, L. M. (2023).

Penalized quantile regression for spatially distributed data.

*Book of Short Papers GRASPA 2023, Proceedings of the GRASPA 2023 Conference*, pp. 124–129.

**Castiglione, C.**, Bernardi, M. (2022).

Probabilistic load forecasting via dynamic quantile regression.

*Book of Short Papers IWSM 2022, Proceedings of the 36th International Workshop on Statistical Modelling*, pp. 400–405.

**Castiglione, C.**, Bernardi, M. (2022).

Sparse signal extraction via variational SVM.

*Book of Short Papers SIS 2022, Proceedings of the 51th Scientific Meeting of the Italian Statistical Society*, pp. 864–870.

**Castiglione, C.**, Bernardi, M. (2021).

Semiparametric variational inference for Bayesian quantile regression.

*Book of Short Papers SIS 2021, Proceedings of the 50th Scientific Meeting of the Italian Statistical Society*, pp. 683–688.

## Conference presentations

---

**Castiglione, C.**, Bianco, N. (2024).

Improving Bayesian semiparametric regression via increasing shrinkage priors. (poster presentation)  
*2024 World Meeting of the International Society for Bayesian Analysis (ISBA 2024)*, Venice, Italy, 1–7 July.

**Castiglione, C.**, Arnone, E., Bernardi, M., Farcomeni, A., Sangalli, L. M. (2024).

A flexible framework for spatial quantile regression via PDE regularization. (invited presentation)  
*International Symposium on Nonparametric Statistics (ISNPS 2024)*, Braga, Portugal, 25–29 July.

**Castiglione, C.**, Bianco, N. (2023).

Increasing shrinkage in Bayesian nonparametric regression for differential expression analysis. (poster presentation)  
*2023 IMS International Conference on Statistics and Data Science (ICSIDS 2023)*, Lisbon, Portugal, 11–14 November.

**Castiglione, C.**, Arnone, E., Bernardi, M., Farcomeni, A., Sangalli, L. M. (2023).

Penalized quantile regression for spatially distributed data. (poster presentation)

*Biennial conference of the Italian research group for Environmental Statistics (GRASPA 2023)*, Palermo, Italy, 10–11 July.

**Castiglione, C.**, Bernardi, M. (2023).

Approximate belief updating via semiparametric variational Bayes. (poster presentation)

*Greek stochastics  $\nu'$ , Contemporary Bayesian Inference*, Naxos, Greece, 7–10 July.

**Castiglione, C.** (2022).

Approximate belief updating via semiparametric variational Bayes. (poster presentation)

*Statistical Methods and Models for Complex Data 2022*, Padova, Italy, 21–21 September.

**Castiglione, C.**, Bernardi, M. (2022).

Approximate general Bayesian inference via semiparametric variational Bayes. (invited presentation)

*24th Conference on Computational Statistics (COMPSTAT 2022)*, Bologna, Italy, 23–26 August.

**Castiglione, C.**, Bernardi, M. (2022).

Probabilistic load forecasting via dynamic quantile regression. (poster presentation)

*36th International Workshop on Statistical Modelling (IWSM 2022)*, Trieste, Italy, 18–22 July.

**Castiglione, C.**, Bernardi, M. (2022).

Approximate general Bayesian inference via semiparametric variational Bayes. (oral presentation)

*2022 World Meeting of the International Society for Bayesian Analysis (ISBA 2022)*, Montreal, Canada, 26 June – 1 July.

**Castiglione, C.**, Bernardi, M. (2022).

Sparse signal extraction via Variational SVM. (oral presentation)

*51th Scientific Meeting of the Italian Statistical Society (SIS 2022)*, Caserta, Italy, 22–24 June.

**Castiglione, C.** (2021).

Approximate variational inference based on data augmentation methods. (oral presentation)

*14th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2021)*, London, UK, 18–20 December.

**Castiglione, C.**, Bernardi, M. (2021).

Variational inference for non-crossing quantile regression. (poster presentation)

*2021 World Meeting of the International Society for Bayesian Analysis (ISBA 2021)*, Online, 28 June – 02 July.

**Castiglione, C.**, Bernardi, M. (2022).

Semiparametric variational inference for Bayesian quantile regression. (oral presentation)

*50th Scientific Meeting of the Italian Statistical Society (SIS 2021)*, Cagliari, Italy, 22–24 June.

## Software

---

**sgdGMF:** An R/C++ package for the estimation of high-dimensional generalized matrix factorization (GMF) models via adaptive stochastic gradient descent (SGD).

[github/repo](#) 

**BayesGLMM:** A Julia package for the estimation of Bayesian generalized linear mixed effect models (GLMM) via variational approximations and non-conjugate variations message passing.

[github/repo](#) 

## Teaching

---

**Teaching assistant**, 14 hours

University of Padua, Department of Statistical Sciences

Course: *Multivariate data analysis*, Bachelor in Statistics

Padua, Italy

Oct 2024 - Jan 2025

**Teaching assistant**, 22 hours  
University of Padua, Department of Statistical Sciences  
Course: *Statistical Models 1*, Bachelor in Statistics

Padua, Italy  
Feb 2024 - Jul 2024

**Teaching assistant**, 14 hours  
University of Padua, Department of Statistical Sciences  
Course: *Multivariate data analysis*, Bachelor in Statistics

Padua, Italy  
Oct 2023 - Jan 2024

**Academic tutor**, 25 hours  
University of Padua, Department of Statistical Sciences  
Course: *Advanced statistics*, Master in Statistics

Padua, Italy  
Sep 2017 - Sep 2018

**Academic tutor**, 25 hours  
University of Padua, Department of Statistical Sciences  
Course: *Calculus 1*, Bachelor in Statistics

Padua, Italy  
Sep 2017 - Sep 2018

## Supervising experience

---

**Master thesis**, course in Mathematical Engineering, Politecnico di Milano  
Title: *Penalised quantile spatial regression: simultaneous estimation and spatio-temporal modelling*  
Students: Ilenia Di Battista, Marco F. De Sanctis  
Advisors: Prof. Laura M. Sangalli, Eleonora Arnone, **Cristian Castiglione**

2023