Cristian Castiglione

Milan, Italy

cristian castiglione@libero.it +39 340 215 37 84 cristiancastiglione.github.io

ⓑ 0000-0001-5883-4890 **in** CristianCastiglione **♀** CristianCastiglione

Research interests

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

Current position _____

Postdoctoral research fellow

Milan, Italy Apr 2024 - Present

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

Past academic positions _____

Postdoctoral research fellow

Padua, Italy Feb 2023 – Apr 2024

University of Padua, Department of Statistical Sciences

Project: Statistical methods and models for the integration of multiomic data

Advisor: Prof. Davide Risso

Education

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

Padua, Italy Oct 2019 - May 2023

Padua, Italy

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

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

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

Oct 2016 - Nov 2018

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

Best Report Prize at Stats Under the Stars 3 (SuS3).

Florence, Italy 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)

Pubblications

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 ☑

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 (ICSDS 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 ν' , 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 hoursPadua, ItalyUniversity of Padua, Department of Statistical SciencesOct 2024 - Jan 2025

Course: Multivariate data analysis, Bachelor in Statistics

Teaching assistant, 22 hours Padua, Italy University of Padua, Department of Statistical Sciences Feb 2024 - Jul 2024

Course: Statistical Models 1, Bachelor in Statistics

Teaching assistant, 14 hours Padua, Italy

University of Padua, Department of Statistical Sciences Oct 2023 - Jan 2024

Course: Multivariate data analysis, Bachelor in Statistics

Academic tutor, 25 hours Padua, Italy

University of Padua, Department of Statistical Sciences Sep 2017 - Sep 2018

Course: Advanced statistics, Master in Statistics

Academic tutor, 25 hours Padua, Italy University of Padua, Department of Statistical Sciences Sep 2017 - Sep 2018

Course: Calculus 1, Bachelor in Statistics

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

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