

Sandra Fortini

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Current Academic Position

MAY 2007 – *Associate Professor of Statistics, Bocconi University*

Past Positions

MAY 1995 – MAY 2007 *Assistant professor of Statistics, Bocconi University*

MAY 1994 – APR 1995 *Researcher,*

Institute for the Applications of Mathematics and Informatics, National Council of Research

MAY 1990 – APR 1994 *Research fellow,*

Institute for the Applications of Mathematics and Informatics, National Council of Research

Education

AUG 1993 *Master of Science in Applied Stochastic Systems – University College London*

JUL 1989 *Degree in Mathematics with honours (110/110 cum laude), University of Milano.*

Editorial activity

JAN 2016 – *Associate Editor, Sankhya – The Indian Journal of Statistics Series A – Mathematical Statistics and Probability*

Society memberships

*Institute of Mathematical Statistics; International Society for Bayesian Analysis;
Italian Statistical Society, Italian Mathematical Society.*

Research grants

2017 – 2020 PRIN – *MIUR grant 2015SNS29B – Modern Bayesian nonparametric methods*

1996 – 1998 PRIN – *Decisioni statistiche: teoria e applicazioni.*

1998 – 2000 PRIN – *Modelli statistici: basi probabilistiche e procedure per l'inferenza e le decisioni.*

1993 – 1994 PRIN – *Inferenza statistica: basi probabilistiche e sviluppi metodologici.*

Research supervision

Polina Sporysheva, PhD (joint supervision with Sonia Petrone). Defense Jan. 2017

Hristo Sariev, PhD. (joint supervision with Sonia Petrone). Defence Jan. 2021

Marta Bonsaglio, PhD. Defense Jan 2022.

Main publications

- “Deep Stable neural networks: large-width asymptotics and convergence rates”
Favaro, S., Fortini, S. and Peluchetti, S.
Bernoulli Forthcoming
<https://www.bernoullisociety.org/publications/bernoulli-journal/bernoulli-journal-papers>
- “Infinite-color randomly reinforced urns with dominant colors”
Sariev, H., Fortini, S. and Petrone, S.
Bernoulli, 29(1) 132-152. 2023.
<https://doi.org/10.3150/21-BEJ1452>
- “Infinitely wide limits for deep Stable neural networks: sub-linear, linear and super-linear activation functions”
Bordino, A., Favaro, S. and Fortini, S.
Transactions of Machine Learning Research. 2022.
<https://openreview.net/forum?id=A5tIluhDW6>
- “Approximating the Operating Characteristics of Bayesian Uncertainty Directed Trial Designs”
Bonsaglio, M., Fortini, S., Venz, S. and trippa, L.
Journal of Statistical Planning and Inference, 221, 90-99. 2022
<https://doi.org/10.1016/j.jspi.2022.03.001>
- “Infinite-channel deep convolutional stable neural networks”
Bracale, D. Favaro, S., Fortini, S. and Peluchetti, S.
Bayesian Deep Learning NeurIPS Workshop. 2021
<http://bayesiandeeplearning.org/2021/papers/4.pdf>
- Predictive constructions based on measure-valued Pólya urn processes
Sariev H., Fortini, S. and Petrone, S.
Mathematics, 9(22), 2845. 2021
<https://doi.org/10.3390/math9222845>
- “Large-width functional asymptotics for deep Gaussian neural networks”
Bracale, D., Favaro, S., Fortini, Su. and Peluchetti, S.
International Conference on Learning Representations, 2021
<https://openreview.net/pdf?id=0aW6lYOYB7d>
- “Stable behaviour of infinitely wide deep neural networks”
Favaro S., Fortini, S. and Pelucchetti, S.
Proceedings of the 23rd International Conference on Artificial Intelligence and Statistics. 2020.
<http://proceedings.mlr.press/v108/peluchetti20b/peluchetti20b.pdf>
- “Quasi-Bayes properties of a procedure for sequential learning in mixture models”
Fortini, S. and Petrone S.
Journal of the Royal Statistical Society B, 82(4), 1087-1114. 2020
<https://rss.onlinelibrary.wiley.com/doi/abs/10.1111/rssb.12385>

- "On a notion of partially conditionally identically distributed sequences"
Fortini, S., Petrone S. and Sporysheva P.
Stochastic Processes and their Applications. 128(3), 727- 1072. 2018.
<https://www.sciencedirect.com/science/article/abs/pii/S0304414917301631>
- "Predictive Characterization of Mixtures of Markov Chains"
Fortini, S. and Petrone S.
Bernoulli Journal 23(3), 1538-1565. 2017
<http://dx.doi.org/10.3150/15-BEJ787>
- "Predictive distribution (de Finetti's view)"
Fortini, S. and Petrone S.
Statsref-Statistics Reference Online. Wiley. 2016
<http://onlinelibrary.wiley.com/doi/10.1002/9781118445112.stat07831/abstract>
- "Hierarchical reinforced urn processes"
Fortini, S. and Petrone S.
Stat. Prob. Lett 82, 1521 - 1529. 2012
<http://www.sciencedirect.com/science/article/pii/S0167715212001551>
- "Predictive construction of priors in Bayesian nonparametrics"
Fortini, S. and Petrone S.
Braz. J. Probab. Stat. 6,4,423 - 449. 2012
<https://projecteuclid.org/euclid.bjps/1341320251>
- "Central Limit Theorem with Exchangeable Summands and Mixtures of Stable Laws as Limits"
Fortini, S., Ladelli L, Regazzini, E.
BUMI 5,3, 515 - 542. 2012
<https://arxiv.org/abs/1204.4357>
- "Recursive Equations for the predictive distributions of some determinantal processes"
Cifarelli D.M. and Fortini, S.
Stat. Prob. Lett. 81, 8-15. 2011
<http://www.sciencedirect.com/science/article/pii/S0167715210002622>
- "A Poisson Approximation for Colored Graphs Under Exchangeability"
Fortini, S. and Cerquetti A.
Sankhya A 68 183-197. 2006
<https://www.jstor.org/stable/25053492>
- "A characterization for mixtures of Semi Markov processes"
Epifani I., Fortini, S. and Ladelli L.
Stat. Prob. Lett. 60 (4): 445-457. 2002
<https://www.sciencedirect.com/science/article/abs/pii/S0167715202003243>
- "On mixtures of distributions of Markov chains"
Fortini, S., Ladelli L., Petris G., Regazzini E.
Stoch. Proc. Appl. 100, 147-165. 2002
<https://www.sciencedirect.com/science/article/pii/S0304414902000935>

- "On the use of the concentration function in Bayesian robustness"
Fortini, S and Ruggeri F.
In *Robust Bayesian Analysis. Lecture Notes in Statistics*, pp.109-126. Springer-Verlag. 2000
<https://www.springer.com/gp/book/9780387988665>
- "Exchangeability, predictive distributions and parametric models"
Fortini, S. and Ladelli L.
Sankhya, A, Vol62-1, pp. 86-109. 2000
<https://www.jstor.org/stable/25051292>
- "On parametric models for invariant probability measures".
Berti P., Fortini S., Ladelli L., Regazzini E., Rigo P.
Quaderni di Statistica. Portici, Vol. 2, pp. 39-57. 2000
- "Differential properties of the concentration function".
Fortini S., Ruggeri F.
Sankhya, A, Vol. 59, pp. 345-364. 1997
<https://www.jstor.org/stable/25051164>
- "A central limit problem for partially exchangeable random variables"
Fortini S., Ladelli L., Regazzini E.
Theory Probab. Appl. Vol. 41, Num. 2, pp. 353-379. 1996
<http://www.mathnet.ru/links/a4695b480973bab2a1d2dea68c0d048b/typ2943.pdf>
- "Concentration function and sensitivity to the prior"
Fortini S., Ruggeri F.
JISS, Vol. 4, pp. 283-297. 1995
<https://link.springer.com/article/10.1007/BF02589116>
- "On defining neighborhoods of measures through the concentration function"
Fortini S., Ruggeri F.
Sankhya, series A, Vol. 56, Parte 3, pp. 444 - 457. 1994
<https://www.jstor.org/stable/25051010>
- "Concentration functions and Bayesian robustness"
Fortini S., Ruggeri F.
J. Stat. Plann. Inference, Vol. 40, Num. 2/3, pp. 205 - 220. 1994
<https://www.sciencedirect.com/science/article/abs/pii/037837589490121X>
- "Concentration function and coefficients of divergence for signed measures"
Fortini S., Ruggeri F.
JISS Vol. 2, No. 1, pp. 17 - 34. 1993
<https://link.springer.com/article/10.1007/BF02589073>

Main teaching activities

Bachelor

2020 – *Probability BAI*
2007 – 2020 *Quantitative Methods for Finance CLEF*

Master

2007 – 2021 *Financial Econometrics and Empirical Finance CLEFIN.*

PhD

2005 – *Probability I, PhD Statistics*
2018 – *Sochastic Processes I, PhD Statistics*
2006 – *Probability, PhD in Economics and Finance*

Main teaching publications

Fortini, S., Gaffi F. Introduction to Probability – *BAI Series, Volume 2*, EGEA 2021

Fortini, S. Modelli Statistici per le Applicazioni Finanziarie. *Le Dispense del Pellicano* – EGEA 2010