Tommaso Rigon

Contact Information

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Research Interests: Applied Bayesian Modeling, Bayesian clustering, Bayesian Nonparametrics, Computational Statistics, Functional Data Analysis, Mixture Models, Species Sampling Models

Research network: Member of BayesLab at the Bocconi Institute for Data Science and Analytics (BIDSA), and the MIDAS Complex Data Modeling Research Network

Current position

Assistant Professor (*Ricercatore SECS-S/01, Legge 240/10 tipo B*)
University of Milano-Bicocca, Department of Economics, Management & Statistics (DEMS), Milan, Italy (from 05/2023 to present)

Past academic positions

Assistant Professor (*Ricercatore SECS-S/01, Legge 240/10 tipo A*)
University of Milano-Bicocca, Department of Economics, Management & Statistics (DEMS), Milan, Italy (from 10/2020 to 04/2023)

Postdoctoral Associate
Duke University, Department of Statistical Sciences, Durham, USA (from 02/2020 to 09/2020)

Research Associate
Duke University, Department of Statistical Sciences, Durham, USA (from 10/2019 to 02/2020)

Research Affiliate
de Castro Statistics Initiative, Collegio Carlo Alberto, Turin, Italy (from 09/2017 to 09/2020)

Education

Bocconi University, Milan, Italy

Ph.D. in Statistics (*Dottorato di ricerca in Statistica*), Department of Decision Sciences (from 09/2015 to 09/2019, thesis defense 01/2020)

- Thesis Topic: *Finite-dimensional nonparametric priors: theory and applications*
- Advisors: Antonio Lijoi and Igor Prünster
- Ph.D. awarded with honors

Università degli Studi di Padova, Padova, Italy

M.Sc. in Statistical Sciences (*Laurea Magistrale in Scienze Statistiche*), School of Statistics (from 10/2013 to 09/2015)

- Thesis Topic: *Functional telecommunication data: a Bayesian nonparametric approach*
- Advisor: Bruno Scarpa
- Final mark: 110/110 with honors

B.Sc. in Statistics, Economics & Finance (*Laurea Triennale in Statistica, Economia & Finanza*), School of Statistics (from 10/2010 to 04/2013)

- Thesis Topic: *Box-Cox transformation: an analysis based on the likelihood*
- Advisor: Nicola Sartori
- Final mark: 110/110 with honors

Awards

Academic awards

[2024] *Blackwell-Rosenbluth Award 2024.* Junior Section of the International Society for Bayesian Analysis (J-ISBA)

[2024] *Mitchell Prize 2023.* American Statistical Association (ASA) & International Society for Bayesian Analysis (ISBA)

[2022] *National Scientific Qualification for Associate Professor in Statistics* (13/D1)

[2021] *Young Talents Award.* University of Milano-Bicocca & Accademia Nazionale dei Lincei

[2021] *Savage Award 2020* (*Theory and Methods*). American Statistical Association (ASA) & International Society for Bayesian Analysis (ISBA)

[2017] *Best Ph.D. student in Statistics*. Bocconi University

Data competitions

[2018] *Best objective prediction*. Stat under the Stars 4

[2017] *Young-CLADAG data contest*. Classification and Data Analysis group

[2017] *Bocconi summer school data competition*. Bocconi summer school

Travel awards

[2019] *Travel award (accommodation)*. BNP12 conference Oxford, UK

[2019] *Travel award (400£)*. O'Bayes 2019 conference, Warwick, UK

[2018] *ISBA travel award (250$)*. ISBA 2018 world meeting, Edinburgh, UK

[2017] *ISBA travel award (700$)*. O'Bayes 2017 conference, Austin, Texas

Service to profession

Editorial activity

[2022/Present] Associate Editor of Bayesian Analysis

Referee service (alphabetical order)

Annals of Applied Statistics • Annals of Statistics • Bayesian Analysis • Bernoulli • Biometrics • Biometrika • Computational Statistics & Data Analysis • Electronic Journal of Statistics • European Journal of Operational Research • IEEE Transactions on Neural Networks and Learning Systems • Journal of Computational & Graphical Statistics • Journal of the American Statistical Association • Journal of Statistical Planning and Inference • NeurIPS • Plos One • Statistical Methods & Applications • Social Indicators Research • Statistics & Probability Letters • Statistical Science

Positions in Academic Societies

[2024] **Peer mentor** in the j-ISBA Peer Mentoring Scheme, "Researchers supporting other researchers"

[2024] **Member of the committee** for the DeGroot Prize

[2022] **Member of the committee** for the Savage Award, Theory and Methods

[2021/24] **Social media manager** of the International Society for Bayesian Analysis

[2016/18] **Elected member of the board** of the young group (ySIS) of the Italian Statistical Society

Organization of Scientific Events

[2024] **Member of the local and scientific committees** of the *BAyesian Young Statisticians Meeting 2024* (BAYSM 2024), Venice, Italy

[2022] **Organizer of the session** *Flexible Bayesian modelling for biostatistics* at the 15th International Conference of the ERCIM WG on Computational and Methodological Statistics conference, London, UK

[2021] **Organizer of the j-ISBA session** *Computational and modeling advances for complex biological data* at the 2021 World Meeting of the International Society for Bayesian Analysis conference, virtual

[2019] **Organizer of the YSIS session** *think outside of the black-box: statistical reasoning in applications* of the SIS2019: Smart Statistics for Smart Applications conference, Milan, Italy

[2019] **Member of the organizing committee** of *Stats under the Stars 5*, a hackathon for young Data Scientists, Milan, Italy

[2017] **Member of the local organizing committee** of the *10th international workshop on Bayesian inference in stochastic processes (BISP10)*, Milan, Italy

Service to University

Positions in Boards and Committees

- **Faculty member of the Ph.D. program** in *Economics, Statistics and Data Science*, of the University of Milano-Bicocca (from 2024 to present)
- **Member admission committee for the Ph.D. program** in *Economics, Statistics and Data Science*, of the University of Milano-Bicocca (2024)
- **Member of the selection committee for adjunct professors** at the University of Milano-Bicocca (4 times, 2023/2024)
- **Doctoral thesis committee member** for
  - *Ph.D. in Statistics and Computer Science* at Bocconi University (Patric Dolmeta, 2024)
  - *Ph.D. in Economics and Statistics* at the University of Milano-Bicocca (Camilla Salvatore, Luca Brusa, 2023; Luca Aiello, 2024)
  - *Ph.D. Mathematics, Information sciences and technologies, Computer science* at the University Grenoble Alpes (Louise Alamichel, 2024)
- **Social media manager of the Department** (DEMS), of the University of Milano-Bicocca, from 2021 to present

Students Supervised, Co-supervised, and Mentored

- **Current Ph.D. students**: Luca Presicce (**Ph.D.**), Davide Agnoletto (**M.Sc.**, **Ph.D.**, supervisor: Bruno Scarpa), Riccardo Cogo (**Ph.D.**, supervisor: Federico Camerlenghi), Ching-Lung Hsu (**Ph.D.**, supervisor: David Dunson)
- **Former Ph.D. students**: Alessandro Zito (**Ph.D.**, supervisor: David Dunson, 2024)
- I have supervised and co-supervised about 30 B.Sc./M.Sc. students in applied and research-oriented theses on a broad range of topics

Funding and grants

Collaborator of the NEMESIS ERC project entitled "*sociogeNEsis of criMinal nEtworks: reconStruction, dIscovery and diSruption*", funded by the European Research Council ERC starting grant for the years 2024-2029. PI: Daniele Durante

Member of the research group of the grant PRIN 2022 entitled "*Measuring Biodiversity via Bayesian Nonparametrics: Estimation, Clustering and Uncertainty Quantification*" for the years 2023-2025. PI: Igor Prünster. CO-PI: Federico Camerlenghi

Member of the research group of the grant PRIN 2022 entitled "*Discrete random structures for Bayesian learning and prediction*" for the years 2023-2025. PI: Antonio Lijoi. CO-PI: Bernardo Nipoti

Member of the research group of the grant FAQC 2021 funded by the University of Milano-Bicocca. PI: Bernardo Nipoti

Member of the research group of the LIFEPLAN ERC project, funded by the European Research Council through a 12.6M€ ERC-synergy grant for the years 2020-2026. Global biodiversity research PI: prof. Tomas Roslin. Statistical research PI: prof. David B. Dunson. Corresponding PI: prof. Otso Ovaskainen

Member of the research group of the grant R01ES027498 funded by the National Institute of Environmental Health Sciences of the United States National Institutes of Health. PI: Amy H. Herring

Publications

Refereed journals

1. Agnoletto, D., **Rigon, T.**, and Dunson D.B. (2025+). Bayesian inference for generalized linear models via quasi-posteriors. *Biometrika*, to appear
2. Zito, A., **Rigon, T.**, and Dunson, D. B. (2025+). Bayesian nonparametric modeling of latent partitions via Stirling-gamma priors. *Bayesian Analysis*, to appear

3. **Rigon, T.**, Scarpa, B. and Petrone, S. (2025). Enriched Pitman–Yor processes. *Scandinavian Journal of Statistics*, to appear

4. Lijoi, A., Prünster, I. and **Rigon, T.** (2024). Finite-dimensional discrete random structures and Bayesian clustering. *Journal of the American Statistical Association* (*T&M*), **119**(546), 929–941.

5. Catalano, M., Lijoi, A., Prünster, I. and **Rigon, T.** (2023). Bayesian modeling via discrete nonparametric priors. *Japanese Journal of Statistics and Data Science*, **6**, 607–624

6. **Rigon, T.** (2023). An enriched mixture model for functional clustering. *Applied Stochastic Models in Business and Industry*, **39**, 232–250

7. **Rigon, T.** and Aliverti, E. (2023) Conjugate priors and bias reduction for logistic regression models. *Statistics & Probability Letters*, **202**, 109901

8. **Rigon, T.**, Herring, A. H. and Dunson, D. B. (2023). A generalized Bayes framework for probabilistic clustering. *Biometrika*, **110**(3), 559–578

9. Zito, A., **Rigon, T.** and Dunson, D. B. (2023). Inferring taxonomic placement from DNA barcoding aiding in discovery of new taxa. *Methods in Ecology & Evolution*, **14**, 529–542

10. Zito, A., **Rigon, T.**, Ovaskainen, O. and Dunson, D. B. (2023). Bayesian modelling of sequential discoveries. *Journal of the American Statistical Association* (*T&M*), **118**(544), 2521–2532

11. Legramanti, S., **Rigon, T.** and Durante, D. (2022). Bayesian testing for exogenous partition structures in stochastic block models. *Sankhya A: The Indian Journal of Statistics*, **84**, 108–126

12. Legramanti, S., **Rigon, T.**, Durante, D. and Dunson, D. B. (2022). Extended stochastic block models with application to criminal networks. *Annals of Applied Statistics*, **16**(4), 2369-2395

13. Reverberi, C., **Rigon, T.**, Solari, A., Hassan, C., Cherubini, P., GI Genius CADx Study Group and A. Cherubini (2022). Experimental evidence of effective human-AI collaboration in medical decision-making. *Scientific Reports*, **12**(14952)

14. Favaro, S., Panero, F. and **Rigon, T.** (2021). Bayesian nonparametric disclosure risk assessment. *Electronic Journal of Statistics*, **15**(2), 5626–5651

15. **Rigon, T.** and Durante, D. (2021). Tractable Bayesian density regression via logit stick-breaking priors. *Journal of Statistical Planning and Inference*, **211**, 131–142

16. Lijoi, A., Prünster, I. and **Rigon, T.** (2020). Sampling hierarchies of discrete random structures. *Statistics & Computing*, **30**, 1591–1607

17. Lijoi, A., Prünster, I. and **Rigon, T.** (2020). The Pitman–Yor multinomial process for mixture modeling. *Biometrika*, **107**(4), 891–906

18. Durante, D. and **Rigon, T.** (2019). Conditionally conjugate mean-field variational Bayes for logistic models. *Statistical Science*, **34**(3), 472–485

19. **Rigon, T.**, Durante, D. and Torelli, N. (2019). Bayesian semiparametric modelling of contraceptive behavior in India via sequential logistic regressions. *Journal of the Royal Statistical Society, Series A*, **182**(1) 225–247

20. Durante, D., Canale, A. and **Rigon, T.** (2019). A nested expectation-maximization algorithm for latent class regression models. *Statistics & Probability Letters*, **146**, 97–103

Submitted and working papers

21. **Rigon, T.**, Hsu, C. and Dunson D.B. (2025+). A Bayesian theory for estimation of biodiversity. Submitted, *arXiv:2502.01333*

22. Anceschi, N., **Rigon, T.**, Zanella, G., and Durante D. (2025+). Optimal lower bounds for logistic log-likelihoods. Submitted, *arXiv:2410.10309*

23. Ghilotti, L., Camerlenghi, F., and **Rigon, T.** (2025+). Bayesian analysis of product feature allocation models. Submitted, *arXiv:2408.15806*

Publications in monographs, volumes, and discussions

24. Agnoletto, D., **Rigon, T.** and Dunson, D.B. (2025). Bayesian inference for generalized linear models via quasi-posteriors: an application to Eurasian Chaffinch abundance in Finland. In *Methodological and Applied Statistics and Demography III* (Pollice, A. and Mariani, P., editors). Springer.

25. **Rigon, T.**, Aliverti, E., Russo, M. and Scarpa, B. (2021). A discussion on: "Centered partition processes: Informative priors for clustering" Paganin, S., Herring, A. H., Olshan, A. F., Dunson, D. B., et al. (2021) in *Bayesian Analysis* **16**(1) 301–370

26. Aliverti, E., Paganin, S., **Rigon, T.** and Russo, M. (2019). A discussion on: "Latent nested nonparametric priors" by Camerlenghi, F., Dunson, D. B., Lijoi, A., Prünster, I. and Rodríguez, A. in *Bayesian Analysis* **14**(4), 1303–1356

27. Caponera, A., Denti, F., **Rigon, T.**, Sottosanti, A. and Gelfand, A. (2018). Hierarchical spatio-temporal modeling of resting state fMRI data. In *Studies in Neural Data Science* (Canale, A., Durante, D., Paci, L. and Scarpa, B., editors). Springer.

National conference proceedings

28. Agnoletto, D., **Rigon, T.** and Scarpa, B. (2023). Bayesian density estimation for modeling age-at-death distribution. In *Book of Short Papers of the Italian Statistical Society* (Chelli, F. M., Ciommi, M., Ingrassia, S., Mariani, F., Recchioni, M.C.) 2023. ISBN: 9788891935618.

29. Cogo, R., Camerlenghi, F. and **Rigon, T.** (2023). Hierarchical processes in survival analysis. In *Book of Short Papers of the Italian Statistical Society* (Chelli, F. M., Ciommi, M., Ingrassia, S., Mariani, F., Recchioni, M.C.) 2023. ISBN: 9788891935618.

30. Presicce, L., **Rigon, T.** and Aliverti, E. (2023). Bias-reduction methods for Poisson regression models. In *Book of Short Papers of the Italian Statistical Society* (Chelli, F. M., Ciommi, M., Ingrassia, S., Mariani, F., Recchioni, M.C.) 2023. ISBN: 9788891935618.

31. Legramanti S., **Rigon, T.** and Durante, D. (2022). Bayesian clustering of brain regions via extended stochastic block models. In *Book of Short Papers of the Italian Statistical Society* (Balzanella, A., Bini, M., Cavicchia, C., Verde, R.) 2022. ISBN: 9788891932310.

32. Zito, A., **Rigon, T.** and Dunson, D. B. (2021). Modelling of accumulation curves through Weibull survival functions. In *Book of Short Papers of the Italian Statistical Society 2021* (Perna, C., Salvati, N. and Schirripa Spagnolo, F.). ISBN: 9788891927361

33. **Rigon, T.** (2018). Logit stick-breaking priors for partially exchangeable count data. In *Book of Short Papers of the Italian Statistical Society 2018* (Abbruzzo, A., Piacentino, D., Chiodi, M. and Brentari, E.). ISBN: 9788891910233

Visiting periods

Universities and research centers

[2023] *Duke University*, North Carolina, USA (April 12th, 2023 - May 9th, 2023)

[2022] *Inria centre at the University Grenoble Alpes*, France (April 3rd, 2022 - April 10th, 2022)

Presentations

Seminars

[2024] *Inria centre at the University Grenoble Alpes*, Grenoble, France

[2023] *University of California in Los Angeles* (*UCLA*), California, USA

[2023] *Duke University*, North Carolina, USA

[2023] *Università Ca' Foscari*, Italy

[2021] *University of Crete*, Greece

[2020] *Collegio Carlo Alberto, Università degli studi di Torino*, Italy

Invited presentations

[2024] *BIRS-CMO 2024: Frontiers of Bayesian Inference and Data Science*, Oaxaca, Mexico (hybrid)

[2024] *Bernoulli-IMS 11th World Congress in Probability and Statistics*, Bochum, Germany

[2024] *2024 ISBA world meeting* (*Biometrika invited session*), Venice, Italy

[2024] *ISBA satellite workshop in Lugano*, Lugano, Switzerland

[2023] *13th Bayesian Inference for Stochastic Processes*, Madrid, Spain

[2023] *BayesComp 2023: Bayesian computing without exact likelihoods* (*satellite event*), Levi, Finland

[2022] *The IISA International Conference on Statistics*, Bangalore, India

[2022] *15th International Conference of the ERCIM WG on Computational and Methodological Statistics*, London, UK

[2022] *Statistical methods and models for complex data* (invited discussant), Padova, Italy

[2022] *CSDA & EcoSta Workshop on Statistical Data Science* (*SDS 2022*), Bologna, Italy

[2022] *5th International Conference on Econometrics and Statistics*, Tokyo, Japan (hybrid)

[2022] *BNP Networking Event*, Nicosia, Cyprus

[2021] *14th International Conference of the ERCIM WG on Computational and Methodological Statistics*, London, UK (hybrid)

[2021] *2021 ISBA world meeting*, virtual

[2020] *Bayes Comp 2020*, Gainesville, Florida, USA

[2019] *The IISA International Conference on Statistics*, Mumbai, India

[2019] *12th International Conference of the ERCIM WG on Computational and Methodological Statistics*, London, UK

[2018] *11th International Conference of the ERCIM WG on Computational and Methodological Statistics*, Pisa, Italy

[2018] *JSM 2018: Joint Statistical Meetings*, Vancouver, Canada

[2018] *49th Scientific meeting of the Italian Statistical Society*, Palermo, Italy

[2017] *The IISA International Conference on Statistics*, Hyderabad, India

Contributed presentations

[2024] *BNP Networking Event*, Singapore

[2023] *Approximation methods in Bayesian Analysis*, CIRM, Marseille, France

[2019] *12th International Conference on Bayesian Nonparametrics*, Oxford, UK

[2018] *BAYSM 2018: Bayesian Young Statisticians Meeting*, Warwick, UK

[2018] *YES IX Scalable Statistics: on Accuracy and Computational Complexity*, Eindhoven, Netherlands

Poster presentations

[2019] *O'Bayes 2019*, Warwick, UK

[2018] *2018 ISBA world meeting*, Edinburgh, UK

[2017] *O'Bayes 2017*, Austin, USA

[2017] *10th international workshop on Bayesian inference in stochastic processes* (*BISP10*), Milan, Italy

[2017] *Italian Statistical Society* (*SIS*) *Bayes 2017*, Rome, Italy

[2016] *2016 ISBA world meeting*, Cagliari, Italy

Teaching

University of Milano-Bicocca, Milan, Italy

As lecturer

- Statistical Inference (Ph.D.) A.Y. 2024/25 - 32h
- Bayesian Computations (Ph.D.) A.Y. 2020/21, 2021/22 - 12h - 2022/23, 2023/24, 2024/25 - 15h
- Data Mining (M.Sc.) - A.Y. 2023/2024 - 42h - A.Y. 2024/2025 - 47h
- Statistics 1 (B.Sc.) - A.Y. 2020/21, 2021/22, 2022/23 - 42h - 2023/24, 2024/2025 - 48h
- R for the multivariate statistical analysis (B.Sc.) - A.Y. 2020/21, 2021/22, 2022/23 - 21h

SDA Bocconi School of Management, Milan, Italy

As lecturer

- AXA Italia - Mastering data for insurance III ed. - A.Y. 2022/23 - 12h
- AXA Italia - Mastering data for insurance II ed. - A.Y. 2021/22 - 8h

Bocconi University, Milan, Italy

As lecturer

- Foundations of data science (B.Sc.) - A.Y. 2022/23, 2023/24, 2024/25 - 10h

As teaching assistant

- Data analysis (B.Sc.) - A.Y. 2016/17
- Statistics for economic and business (M.Sc.) - A.Y. 2016/17

Università degli Studi di Padova, Padova, Italy

As lecturer

- Data mining (M.Sc.) - A.Y. 2020/21 - 8h

As teaching assistant

- Introduction to real analysis (B.Sc.) - A.Y. 2014/15
- Advanced statistical inference (M.Sc.) - A.Y. 2014/15

Past business positions

Intern
Groupon, Dublin, Ireland (from 09/2014 to 11/2014)

Business analyst
Bravofly Rumbo Group, Chiasso, Switzerland (from 10/2013 to 07/2014)

Intern
Bravofly Rumbo Group, Chiasso, Switzerland (from 05/2013 to 10/2013)

Summer schools and workshops

Summer Schools and workshops

- *StartUp Research*, Certosa di Pontignano, Italy (06/2017)
- *Bocconi Summer School in Advanced Statistics and Probability*, Como, Italy (07/2017)
- *J. T. Schwartz International School for Scientific Research*, Lipari, Italy (07/2013)

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