

# Giovanni Rebaudo

CONTACT INFORMATION	<b>Address:</b> Corso Unione Sovietica 218/bis 10134 Torino, Italy <b>Email:</b> giovanni.rebaudo@unito.it <b>Website:</b> <a href="https://giovannirebaudo.github.io">https://giovannirebaudo.github.io</a>	
CURRENT POSITIONS	<b>University of Torino</b> , Turin, Italy	
	<b>Assistant Professor</b> of Statistics (RTDA secs-s/01) Department of Economics, Social Studies, Applied Mathematics and Statistics (ESOMAS)	<b>3/2023–Present</b>
	<b>Collegio Carlo Alberto</b> , Turin, Italy	
	<b>Research affiliate</b> , “de Castro” Statistics Initiative	<b>3/2023–Present</b>
PAST POSITION	<b>Bocconi Institute for Data Science and Analytics (BIDSA)</b> , Milan, Italy	
	<b>Research affiliate</b> , Bayesian Learning Laboratory (Bayes Lab)	<b>6/2020–Present</b>
	<b>University of Texas at Austin</b> , Texas, USA	
EDUCATION	<b>Post–Doctoral Research Fellow</b> , Department of Statistics and Data Sciences Mentors: Peter Müller and Abhra Sarkar	<b>10/2020–2/2023</b>
	<b>Bocconi University</b> , Milan, Italy	
	Ph.D. in <b>Statistics</b> . Awarded with honors • Title: <i>Bayesian Inference for Complex Data Structures: Theoretical and Computational Advances</i> • Advisors: Antonio Lijoi and Igor Prünster	<b>9/2016–9/2020 (Thesis Defense 2/2021)</b>
	<b>University of Trieste</b> , Trieste, Italy	
RESEARCH INTERESTS	M.S. in <b>Statistical and Actuarial Sciences</b> . Final mark: 110/110 with honors • Title: <i>Bayesian Hierarchical Model: Theory and Application</i> • Advisors: Francesco Pauli and Nicola Torelli	<b>9/2014–7/2016</b>
	<b>University of Milano-Bicocca</b> , Milan, Italy	
	B.S. in <b>Statistical and Economic Sciences</b> . Final mark: 110/110 with honors • Title: <i>A New Technique for Estimation of Logarithmic Time Series Models: Forecast Comparison Based on Economic Data</i> • Advisor: Matteo Maria Pelagatti	<b>9/2011–7/2014</b>
	Bayesian Methods and Computation, Cluster Analysis, Bayesian Nonparametrics, Dimensionality Reduction, Time-Series Analysis, Predictive Inference, Categorical Regression, Auditory Neuroscience, Single-Cell RNA.	
PUBLICATIONS	<b>Papers in Peer-Reviewed Journals</b> <ol style="list-style-type: none"><li>Franzolini, B. and Rebaudo G. (2023) <b>Entropy regularization in probabilistic clustering</b>. <i>Statistical Methods &amp; Applications</i>, in press.</li><li>Ascolani, F., Lijoi, A., Rebaudo, G. and Zanella, G. (2023). <b>Clustering consistency with Dirichlet process mixtures</b>. <i>Biometrika</i>, 110, 551–558.</li><li>Lijoi, A., Prünster, I. and Rebaudo, G. (2023). <b>Flexible clustering via hidden hierarchical Dirichlet priors</b>. <i>Scandinavian Journal of Statistics</i>, 50, 213–234.</li><li>Fasano, A., Rebaudo, G., Durante D. and Petrone S. (2021). <b>A closed-form filter for binary time series</b>. <i>Statistics and Computing</i>, 31:47, 1–20.</li></ol> <b>Papers under Review</b> <ol style="list-style-type: none"><li>Rebaudo G. and Müller, P. <b>Graph-aligned random partition model (GARP)</b>.</li><li>Lin Q., Rebaudo G. and Müller, P. <b>Separate exchangeability as modeling principle in Bayesian nonparametrics</b>.</li><li>Roark, C. L., Paulon, G., Rebaudo, G., McHaney, J. R., Sarkar, A. and Chandrasekaran, B. <b>Individual differences in working memory impact decision processes during speech category learning</b>.</li><li>Rebaudo G., Llanos, F., Chandrasekaran B. and Sarkar, A. <b>Bayesian mixed multidimensional scaling for auditory processing</b>.</li></ol>	

## Discussions

9. Rebaudo G., Fasano, A., Franzolini, B. and Müller, P. (2023) **A discussion on: “Evaluating sensitivity to the stick-breaking prior in Bayesian nonparametrics” by Giordano, R., Liu, R., Jordan M. I. and Broderick T.** *Bayesian Analysis*, 18, 345–347.
10. Catalano, M., Fasano, A. and Rebaudo G. (2023) **A discussion on: “Martingale posterior distributions” by Fong, E., Holmes C. and Walker S.** *Journal of the Royal Statistical Society Series B*, in press.

## Conference Proceedings and Book Chapters (Peer-Reviewed)

11. Anceschi N., Fasano, A. and Rebaudo G. (2023). **Expectation propagation for the smoothing distribution in dynamic probit.** *Bayesian Statistics, New Generations New Approaches (BaYSM2022)*, in press.
12. Fasano, A., Anceschi N., Franzolini, B. and Rebaudo G. (2023). **Efficient computation of predictive probabilities in probit models via expectation propagation.** *Book of Short Papers - CLADAG 2023*, 449–452.
13. Franzolini, B., Bondi, L., Fasano, A. and Rebaudo G. (2023). **Bayesian forecasting of multivariate longitudinal zero-inflated counts: an application to civil conflict.** *Book of Short Papers - CLADAG 2023*, 465–468.
14. Fasano, A., Anceschi N., Franzolini, B. and Rebaudo G. (2023). **Efficient expectation propagation for posterior approximation in high-dimensional probit models.** *Book of Short Papers - SIS 2023*, 1133–1138.
15. Fasano, A., Rebaudo G. and Anceschi N. (2022). **Bayesian inference for the multinomial probit model under Gaussian prior distribution.** *Book of Short Papers - SIS 2022*, 871–876.
16. Franzolini, B. and Rebaudo G. (2022). **A regularized-entropy estimator to enhance cluster interpretability in Bayesian nonparametric.** *Book of Short Papers - SIS 2022*, 387–398.
17. Fasano, A. and Rebaudo G. (2021). **Variational inference for the smoothing distribution in dynamic probit models.** *Book of Short Papers - SIS 2021*, 1076–1081.

## AWARDS

### Academic Awards

- [2023] Assistant professor research prize (Premialità RTD), University of Torino.  
[2020] Special financial support, Bocconi University.  
[2020] Research fellowship, Bocconi University.  
[2016-20] Merit-based Ph.D. fellowship, Bocconi University.

### Data Competitions

- [2018] **Predictive challenge:** best objective prediction. **Stat Under the Stars 4**.  
[2017] **Predictive challenge:** first position. YoungCLADAG data contest.

### Travel Awards

- [2023] Travel award, IISA conference (750\$).  
[2022] Travel award, BNP world meeting (1000\$).  
[2022] Travel award, ISBA world meeting (300\$).  
[2019] Travel award, O’Bayes conference (400£).

## SERVICE TO PROFESSION

### Referee (alphabetical order)

- Annals of Statistics • Bayesian Analysis • Bayesian Young Statisticians Meeting • Electronic Journal of Statistics • Journal of Machine Learning Research • Operations Research • Scandinavian Journal of Statistics • Statistical Methods & Applications • Statistical Science.

### Judge for Paper Competitions

- [2023, 2024] Student Paper Competition for Section on Bayesian Statistical Science (SBSS) of the American Statistical Association (ASA).

### Organization of Scientific Events

- **Organizer** of European Young Statisticians Meeting (EYSM) 2025, Collegio Carlo Alberto, Torino, Italy.

### Volunteer

- European Researchers’ Night. Milan, Italy (2019).

LOCAL DUTIES	<b>Students Supervised</b> Paolo Ciriaci, B.Sc. in Economics and Data Science at the University of Torino (2023).
	<b>Committees</b> <ul style="list-style-type: none"> <li>Committee member for the assignment of teaching positions at the University of Torino (2023).</li> <li>Committee member for the assignment of postdoctoral research positions at the University of Torino (2023).</li> </ul> <b>Website Management</b> <ul style="list-style-type: none"> <li>Updating the webpages for the “de Castro” Statistics Initiative on the Collegio Carlo Alberto website (2023).</li> </ul>
RESEARCH NETWORKS & MEMBERSHIPS	I am a member of the: Complex Data Modeling Research Network led by <b>MiDaS</b> , Institute of Mathematical Statistics [IMS], International Society for Bayesian Analysis [ISBA], Italian Statistical Society [SIS].
GRANTS & FUNDING	<b>Principal Investigator of the ESOMAS Department research project</b> “Bayesian models for interpretable random structures” (Duration: 2023-25).  <b>Member of the PNRR Research Project of National Interest (PRIN-PNRR) group</b> “Measuring biodiversity via Bayesian nonparametrics: estimation, clustering and uncertainty quantification.” (National Coordinator: Igor Prünster; Duration: 2023-25).  <b>Member of the Research Project of National Interest (PRIN) group</b> “Discrete random structures for Bayesian learning and prediction.” (National Coordinator: Antonio Lijoi; Duration: 2023-25).  <b>Member of the NIH project research group</b> “Bayesian methods for optimizing combination antiretroviral therapy for mental health in people with HIV” (Principal Investigator: Yanxun Xu; Duration: 2022-27).  <b>Member of the NSF project research group</b> “Novel statistical frameworks for local inference in neuroscience of learning” (Principal Investigator: Abhra Sarkar; Duration: 2020-23).  <b>Member of the NSF project research group</b> “Collaborative research: Bayesian inference for interpretable random structures” (Principal Investigator: Peter Müller; Duration: 2020-23).  <b>Member of the Research Project of National Interest (PRIN) group</b> “Modern Bayesian nonparametric methods” (National Coordinator: Igor Prünster; Duration: 2017-20).
TEACHING EXPERIENCE	<b>Teaching Certificates</b> <ul style="list-style-type: none"> <li><b>IRIDI START</b>, University of Torino (2024).</li> <li>Bocconi Excellence in Advanced Teaching by BUILT (<b>BEAT</b>) (2019).</li> </ul> <b>Lecturer at University of Torino</b> , Turin, Italy <ul style="list-style-type: none"> <li>Statistics - B.Sc. (AY 2022/2023, 2023/2024).</li> <li>Introduction to Data Science: Statistical Learning and Data Analytics - B.Sc. (AY 2022/2023, 2023/2024).</li> </ul> <b>Guest Lecturer at University of Texas at Austin</b> , Texas, USA <ul style="list-style-type: none"> <li>Monte Carlo Methods - Ph.D. (AY 2022/2023).</li> <li>Mathematical Statistics I - Ph.D. (AY 2022/2023).</li> <li>Introduction to Mathematical Statistics - B.Sc. (AY 2022/2023).</li> </ul> <b>Teaching Assistant at Bocconi University</b> , Milan, Italy <ul style="list-style-type: none"> <li>Machine Learning II - M.Sc. (AY 2020/2021, AY 2019/2020).</li> <li>Data Analysis - M.Sc. (AY 2019/2020, AY 2018/2019, AY 2017/2018).</li> </ul>
SCHOOLS	[2018] <b>Graphical Models.</b> Bocconi Summer School in Advanced Statistics and Probability. Como, Italy. Instructors: S. Lauritzen (University of Copenhagen) and R. Evans (University of Oxford).  [2017] <b>Statistical Causal Learning.</b> Bocconi Summer School in Advanced Statistics and Probability. Como, Italy. Instructors: B. Schölkopf (Max Planck Institute for Intelligent Systems, Tübingen), I. Tolstikhin (Google AI, Zürich) and D. Lopez-Paz (Facebook AI Research, Paris).

PRESENTATIONS **Invited Presentations**

- [2024] Frontiers of Bayesian Inference and Data Science [BIRS–CMO Workshop]. Oaxaca, Mexico.
- [2024] Interpretable Inference via Principled BNP Approaches in Biomedical Research and Beyond. Singapore, SG.
- [2024] ISNPS 2024 [International Symposia on Nonparametric Statistics]. Braga, Portugal.
- [2023] EcoSta 2023 [International Conference on Econometrics and Statistics]. Tokyo, Japan.
- [2023] Approximation Methods in Bayesian Analysis [CIRM Workshop]. Luminy, France.
- [2022] IISA Conference 2022 [International Indian Statistical Association]. Bangalore, India.
- [2022] ISBA 2022 [International Society of Bayesian Analysis]. Montreal, Canada.
- [2021] CMStatistics–ERCIM 2021 [14th International Conference of the ERCIM WG on Computational and Methodological Statistics]. London, UK (online).
- [2021] Foundations of Objective Bayesian Methodology [BIRS–CMO Workshop]. Oaxaca, Mexico.
- [2021] EcoSta 2021 [International Conference on Econometrics and Statistics]. Hong Kong (online).
- [2021] BISP 12 [Bayesian Inference in Stochastic Processes]. Milan, Italy, with discussion (online).
- [2020] CMStatistics–ERCIM 2020 [13th International Conference of the ERCIM WG on Computational and Methodological Statistics]. London, UK (online).
- [2019] IISA Conference 2019 [International Indian Statistical Association]. Mumbai, India.
- [2019] Second Italian Meeting in Probability and Statistics. Vietri sul Mare, Italy.

**Contributed Presentations**

- [2022] BNP13 [International Conference on Bayesian Nonparametrics]. Puerto Varas, Chile.
- [2022] ENAR Meeting [Eastern North American Region International Biometric Society]. Houston, USA (online).

**Poster Presentations**

- [2019] O’Bayes 2019 [Objective Bayes Methodology Conference]. Warwick, United Kingdom.
- [2019] BNP12 [International Conference on Bayesian Nonparametrics]. Oxford, United Kingdom.

**Seminars**

- [2021] SDS Seminar Series. Department of Statistics and Data Sciences at the University of Texas at Austin, USA (online).

COMPUTER  
SKILLS

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**Statistical Software and Programming Language:** R, Python, SAS, STAN, MATHEMATICA.