

Giovanni Rebaudo

CONTACT INFORMATION	<b>Address:</b> Corso Unione Sovietica 218/bis 10134 Turin, 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>Rebaudo, G. and Müller, P. (2024). <b>Graph-aligned random partition model (GARP)</b>. <i>Journal of the American Statistical Association (T &amp; M)</i>, in press.</li><li>Roark, C. L., Paulon, G., Rebaudo, G., McHaney, J. R., Sarkar, A., and Chandrasekaran, B. (2024). <b>Individual differences in working memory impact the trajectory of non-native speech category learning</b>. <i>PLOS ONE</i>, in press.</li><li>Franzolini, B. and Rebaudo, G. (2024) <b>Entropy regularization in probabilistic clustering</b>. <i>Statistical Methods &amp; Applications</i>, 33, 37–60.</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>Aneschi, N., Fasano, A., Franzolini, B., and Rebaudo, G. <b>Scalable expectation propagation for generalized linear regressions</b>.</li></ol>	

8. Rebaudo, G., Lin Q., and Müller, P. **Separate exchangeability as modeling principle in Bayesian nonparametrics.**
9. Rebaudo, G., Llanos, F., Chandrasekaran B., and Sarkar, A. **Bayesian mixed multidimensional scaling for auditory processing.**

#### Discussions

10. Catalano, M., Fasano, A., Giordano, M., and Rebaudo, G. (2024) **A discussion on: “Root and community inference on the latent growth process of a network” by Crane H. and Xu M.** *Journal of the Royal Statistical Society Series B*, in press.
11. 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*, 85, 1406–1407.
12. 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.

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

13. Anceschi, N., Fasano, A., and Rebaudo, G. (2023). **Expectation propagation for the smoothing distribution in dynamic probit.** *Bayesian Statistics, New Generations New Approaches (BaYSM2022), Springer Proceedings in Mathematics and Statistics*, 435, 105–115.
14. 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.
15. 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.
16. 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.
17. 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.
18. 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.
19. 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

- [2024] Travel award, BNP Networking Workshop (200\$).  
 [2024] Travel award, ISBA world meeting (300\$).  
 [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 Applied Statistics • 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, Turin, Italy.

**Volunteer**

- European Researchers' Night. Turin, Italy (2024).
- European Researchers' Night. Milan, Italy (2019).

LOCAL  
DUTIES

**Students and Postdocs Supervised**

**Current Postdocs**

Lorenzo Rimella

**Former B.Sc. Students**

Paolo Ciriaci, B.Sc. in Economics and Data Science at the University of Torino (2023).

**Committees**

- Committee member for the assignment of teaching positions at the University of Torino.
- Committee member for the assignment of postdoctoral research positions at the University of Torino.

**Website Management**

- Updating the webpages for the “de Castro” Statistics Initiative on the Collegio Carlo Alberto website.

RESEARCH  
NETWORKS &  
MEMBERSHIPS

I am a member of the:

Complex Data Modeling Research Network led by **MiDaS**, Institute of Mathematical Statistics [IMS], International Society for Bayesian Analysis [ISBA], Italian Statistical Society [SIS].

GRANTS &  
FUNDING

**Principal Investigator of the ESOMAS Department research project** “Bayesian models for interpretable random structures” (Duration: 2023-25).

**Member of the PNRR Research Project of National Interest (PRIN-PNRR) group** “Measuring biodiversity via Bayesian nonparametrics: estimation, clustering and uncertainty quantification.” (National Coordinator: Igor Prünster; Duration: 2023-25).

**Member of the Research Project of National Interest (PRIN) group** “Discrete random structures for Bayesian learning and prediction.” (National Coordinator: Antonio Lijoi; Duration: 2023-25).

**Member of the NIH project research group** “Bayesian methods for optimizing combination antiretroviral therapy for mental health in people with HIV” (Principal Investigator: Yanxun Xu; Duration: 2022-27).

**Member of the NSF project research group** “Novel statistical frameworks for local inference in neuroscience of learning” (Principal Investigator: Abhra Sarkar; Duration: 2020-23).

**Member of the NSF project research group** “Collaborative research: Bayesian inference for interpretable random structures” (Principal Investigator: Peter Müller; Duration: 2020-23).

**Member of the Research Project of National Interest (PRIN) group** “Modern Bayesian nonparametric methods” (National Coordinator: Igor Prünster; Duration: 2017-20).

TEACHING  
EXPERIENCE

**Teaching Certificates**

- **IRIDI START**: Quality teaching, evaluation and inclusion, University of Torino (2024).
- Bocconi Excellence in Advanced Teaching by BUILT (**BEAT**) (2019).

**Lecturer** at **University of Torino**, Turin, Italy

- Statistics - B.Sc. (AY 2023/24, 2022/23).
- Introduction to Data Science: Statistical Learning and Data Analytics - B.Sc. (AY 2023/24, 2022/23).

**Guest Lecturer** at **University of Texas at Austin**, Texas, USA

- Monte Carlo Methods - Ph.D. (AY 2022/23).
- Mathematical Statistics I - Ph.D. (AY 2022/23).
- Introduction to Mathematical Statistics - B.Sc. (AY 2022/23).

Teaching Assistant at **Bocconi University**, Milan, Italy

- Machine Learning II - M.Sc. (AY 2020/21, 2019/20).
- Data Analysis - M.Sc. (AY 2019/20, 2018/19, 2017/18).

## SCHOOLS

[2018] **Graphical Models.**

Bocconi Summer School in Advanced Statistics and Probability. Como, Italy.

Instructors: S. Lauritzen (University of Copenhagen) and R. Evans (University of Oxford).

[2017] **Statistical Causal Learning.**

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] ISBA-BNP Networking workshop [International Society of Bayesian Analysis - BNP]. Singapore, SG.

[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

[2024] ISBA 2024 [International Society of Bayesian Analysis]. Venice, Italy.

[2019] O'Bayes 2019 [Objective Bayes Methodology Conference]. Warwick, United Kingdom.

[2019] BNP12 [International Conference on Bayesian Nonparametrics]. Oxford, United Kingdom.

### Seminars

[2024] Mathematics & Statistics Seminar Series. Department of Economics at the University of Bergamo, Italy.

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

## COMPUTER SKILLS

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