

Giovanni Rebaudo

CONTACT INFORMATION	Office at University of Turin : Room 3.23, Corso Unione Sovietica 218/bis, 10134 Turin, Italy Office at Collegio Carlo Alberto : Room 216, Piazza Arbarello 8, 10122, Turin, Italy Email: giovanni.rebaudo@unito.it Website: https://giovannirebaudo.github.io	
CURRENT POSITIONS	University of Turin , Turin, Italy Assistant Professor of Statistics (RTDA STAT-01) 3/2023–Present Department of Economics, Social Studies, Applied Mathematics and Statistics (ESOMAS) Collegio Carlo Alberto , Turin, Italy Carlo Alberto Affiliate 4/2025–Present Research Affiliate, “de Castro” Statistics Initiative 3/2023–Present Bocconi Institute for Data Science and Analytics (BIDSA) , Milan, Italy Research Affiliate, Bayesian Learning Laboratory (Bayes Lab) 6/2020–Present	
PAST POSITIONS	University of Texas at Austin , Texas, USA Postdoctoral Research Fellow, Department of Statistics and Data Sciences 10/2020–2/2023 Mentors: Peter Müller and Abhra Sarkar	
EDUCATION	Bocconi University , Milan, Italy Ph.D. in Statistics, awarded with honors 9/2016–9/2020 (Thesis Defense 2/2021) • Thesis title: <i>Bayesian Inference for Complex Data Structures: Theoretical and Computational Advances</i> • Advisors: Antonio Lijoi and Igor Prünster University of Trieste , Trieste, Italy M.Sc. in Statistical and Actuarial Sciences. Final mark: 110/110 with honors 9/2014–7/2016 • Thesis title: <i>Bayesian Hierarchical Model: Theory and Application</i> • Advisors: Francesco Pauli and Nicola Torelli University of Milan-Bicocca , Milan, Italy B.Sc. in Statistical and Economic Sciences. Final mark: 110/110 with honors 9/2011–7/2014 • Thesis title: <i>A New Technique for Estimation of Logarithmic Time Series Models: Forecast Comparison Based on Economic Data</i> • Advisor: Matteo Maria Pelagatti	
RESEARCH INTERESTS	Bayesian Methods and Computation, Cluster Analysis, Bayesian Nonparametrics, Machine Learning, Dimensionality Reduction, Time Series Analysis, Econometrics, Predictive Inference, Categorical Regression, Auditory Neuroscience.	
PUBLICATIONS	Papers in Peer-Reviewed Journals <ol style="list-style-type: none">Rebaudo, G., Lin, Q., and Müller, P. (2026). Separate exchangeability as modeling principle in Bayesian nonparametrics. <i>Statistical Science</i>, forthcoming. TBA.Rebaudo, G. and Müller, P. (2025). Graph-aligned random partition model (GARP). <i>Journal of the American Statistical Association (Theory & Methods)</i>, 120, 486–497. DOI: 10.1080/01621459.2024.2353943.Roark, C. L., Paulon, G., Rebaudo, G., McHaney, J. R., Sarkar, A., and Chandrasekaran, B. (2024). Individual differences in working memory impact the trajectory of non-native speech category learning. <i>PLoS ONE</i>, 19: e0297917, 1–26. DOI: 10.1371/journal.pone.0297917.Franzolini, B. and Rebaudo, G. (2024). Entropy regularization in probabilistic clustering. <i>Statistical Methods & Applications</i>, 33, 37–60. DOI: 10.1007/s10260-023-00716-y.Ascolani, F., Lijoi, A., Rebaudo, G., and Zanella, G. (2023). Clustering consistency with Dirichlet process mixtures. <i>Biometrika</i>, 110, 551–558. DOI: 10.1093/biomet/asac051.Lijoi, A., Prünster, I., and Rebaudo, G. (2023). Flexible clustering via hidden hierarchical Dirichlet priors. <i>Scandinavian Journal of Statistics</i>, 50, 213–234. DOI: 10.1111/sjos.12578.Fasano, A., Rebaudo, G., Durante, D., and Petrone, S. (2021). A closed-form filter for binary time series. <i>Statistics and Computing</i>, 31:47, 1–20. DOI: 10.1007/s11222-021-10022-w.	

Papers under Review

8. Anceschi, N., Fasano, A., Franzolini, B., and Rebaudo, G. **Scalable expectation propagation for generalized linear regressions.** *arXiv: 2407.02128*.
9. Fasano, A., Lijoi, A., Prünster, I., and Rebaudo, G. **Probabilistic discovery of new species and homogeneous subpopulations.**
10. Fasano, A. and Rebaudo, G. **Mean-field variational Bayes for sparse probit regression.**
11. Franzolini, B., Lijoi, A., Prünster, I., and Rebaudo, G. **Multivariate species sampling models.** *arXiv: 2503.24004*.
12. Rebaudo, G., Llanos, F., Chandrasekaran, B., and Sarkar, A. **Bayesian mixed multidimensional scaling for auditory processing.** *arXiv: 2209.00102*.

Discussions

13. Franzolini, B. and Rebaudo, G. (2025). **Invited discussion on: “A tree perspective on stick-breaking models in covariate-dependent mixtures”**, by Horiguchi, A., Chan, C., and Ma, L. *Bayesian Analysis*, 20, 1182–1187. DOI: 10.1214/24-BA1462.
14. Catalano, M., Fasano, A., Giordano, M., and Rebaudo, G. (2025). **A discussion on: “Data fission: splitting a single data point”** by Leiner, J., Duan, B., Wasserman, L., and Ramdas, A. *Journal of the American Statistical Association*, 120, 158–158. DOI: 10.1080/01621459.2024.2412183.
15. Catalano, M., Franzolini, B., Giordano, M., and Rebaudo, G. (2025). **A discussion on: “Sparse Bayesian factor analysis when the number of factors is unknown”** by Frühwirth-Schnatter, S., Hosszejni, D., and Lopes, H. F. *Bayesian Analysis*, 20, 313–315. DOI: 10.1214/24-BA1423.
16. 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*, 86, 874–875. DOI: 10.1093/jrssb/qkae051.
17. 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. DOI: 10.1093/jrssb/qkad095.
18. 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. DOI: 10.1214/22-BA1309.

Conference Proceedings and Book Chapters (Peer-Reviewed)

19. Fasano, A., Rebaudo, G., Rimella, L. (2025). **Empirical Bayes for the ridge penalty in probit models.** *Book of Short Papers - SIS 2025*, 3, 200–205. DOI: 10.1007/978-3-031-95995-0.
 20. 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. DOI: 10.1007/978-3-031-42413-7_10.
 21. 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. ISBN 9788891935632.
 22. 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. ISBN 9788891935632.
 23. 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. ISBN 9788891935618.
 24. 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. ISBN 9788891932310.
 25. 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. ISBN 9788891932310.
 26. Fasano, A. and Rebaudo, G. (2021). **Variational inference for the smoothing distribution in dynamic probit models.** *Book of Short Papers - SIS 2021*, 1076–1081. ISBN 9788891927361.
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Academic Awards

- [2025] ESOMAS department research award 2024, University of Turin.
- [2025] ESOMAS department teaching award 2024, University of Turin.
- [2024] Blackwell–Rosenbluth award 2024, International Society for Bayesian Analysis [ISBA and J-ISBA].
- [2024] National scientific qualification (ASN) for associate professor in Statistics (13/D1).
- [2023] Assistant Professor research prize (Premialità RTD), University of Turin.
- [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

- [2026] Travel award, GNAMPA-INdAM (300€)
- [2025] Travel award, BNP world meeting (500\$).
- [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£).

Referee (alphabetical order)

- Annals of Applied Statistics • Annals of Statistics • Bayesian Analysis • Bayesian Young Statisticians Meeting • Biometrika • Computational Statistics and Data Analysis • Electronic Journal of Statistics • Italian Statistical Society Meeting • Journal of Business & Economic Statistics • Journal of Classification • Journal of Machine Learning Research • Journal of the American Statistical Association (Theory & Methods) • Operations Research • Scandinavian Journal of Statistics • Statistical Methods & Applications • Statistical Science • Stochastic Processes and their Applications.

Editor

- *New Trends in Probability and Mathematical Statistics: Proceedings of the 24th European Young Statisticians Meeting* - Springer Proceedings in Mathematics & Statistics (forthcoming).

Evaluator/Committee Member for Paper Competitions and Academic Awards

- Blackwell-Rosenbluth award, International Society for Bayesian Analysis [ISBA and J-ISBA] (2025).
- Student Paper Competition for Section on Bayesian Statistical Science (SBSS) of the American Statistical Association [ASA] (2026, 2024, 2023).

External Ph.D. Thesis Evaluator

- Ph.D. in Economics, Statistics and Data Science at the University of Milan-Bicocca.
- Ph.D. in Mathematics, Computer Science, and Statistics at the University of Florence.

Organization of Scientific Events

- **(Local and Scientific) Organizer** of European Young Statisticians Meeting (EYSM 2025) of the Bernoulli Society, Collegio Carlo Alberto, Turin, Italy.

Session Organizer

- 2026 ISBA World Meeting. Nagoya, Japan.
- Fifth Italian Meeting on Probability and Mathematical Statistics. Palermo, Italy.

Public Engagement (Terza Missione)

- European Researchers’ Night. Turin, Italy (2025, 2024).
- European Researchers’ Night. Milan, Italy (2019).

Students and Postdocs Supervised at the University of Turin

Postdocs (with first placement)

Lorenzo Rimella (4/2024–7/2025) – Assistant Professor (RTT) at the University of Bergamo.

Current Ph.D. Students

Francesco Furlan (10/2025–Present, co-supervised with M. Ruggiero).

M.Sc. Students (M.Sc. in Stochastics and Data Science)

- Paolo Ciriaci (expected 2025, co-supervised with A. Fasano).
Thesis topic: *Hierarchical Bayesian Nonparametric Priors*.
- Federica Mina (expected 2025, co-supervised with A. Fasano).
Thesis topic: *Assumed Density Filtering for Binary Time-Series*.
- Francesco Furlan (2025, co-supervised with M. Ruggiero).
Thesis topic: *Gibbs Sampling Methods for Smoothing in Fleming–Viot Driven Hidden Markov Models*.
- Luca Griso (2025, co-supervised with M. Ruggiero).
Thesis topic: *Dynamic Clustering in Fleming–Viot Driven Hidden Markov Models*.
- Nurdaulet Kengesbek (2025, co-supervised with A. Fasano).
Thesis title: *Expectation-Maximization for Online Inference: A Study of Relevant Cases*.

B.Sc. Students (B.Sc. in Economics and Data Science)

- Edoardo Lanzetti (2025).
Thesis title: *Multidimensional and Individual Differences Scaling: A Theoretical and Applied Perspective*.
- Paolo Ciriaci (2023).
Thesis title: *Conformal Prediction: Theory and Application*.

Mentoring at Collegio Carlo Alberto

Mentor, Allievi Honors Program (2025–Present).

Committees

- Member of the ESOMAS Department Board (Giunta di Dipartimento) at the University of Turin (2024–2027).
- Committee member for M.Sc. thesis defenses at the University of Turin (2025–Present).
- Committee member for Allievi Honors Program thesis defenses at Collegio Carlo Alberto (2024–Present).
- Committee member for the assignment of teaching positions at the University of Turin (2023–Present).
- Committee member for the assignment of postdoctoral positions at the University of Turin (2023–Present).

Webmaster

- “de Castro” Statistics Initiative within the Collegio Carlo Alberto website (2023–Present).

RESEARCH
NETWORKS &
MEMBERSHIPS

Member of the (alphabetical order):
Bernoulli Society, Complex Data Modeling Research Network led by **MiDaS**, Institute of Mathematical Statistics [IMS], International Society for Bayesian Analysis [ISBA] (Sections: BNP-ISBA, J-ISBA), Istituto Nazionale di Alta Matematica [INDAM] (Group: GNAMPA), Italian Statistical Society [SIS] (Sections: SDS-SIS, SISBayes, y-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

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

- Statistical Machine Learning - M.Sc. (AY 2025/26, 2024/25).
- Introduction to Data Science: Statistical Learning and Data Analytics - B.Sc. (AY 2025/26, 2024/25, 2023/24, 2022/23).
- Statistics - B.Sc. (AY 2023/24, 2022/23).

Guest Lecturer at the **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).

Teaching Certificates

- **IRIDI START**: Quality Teaching, Evaluation and Inclusion (University of Turin, 2024).
- Bocconi Excellence in Advanced Teaching by BUILT (**BEAT**) (2019).

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

[2026] 12th International Conference on Soft Methods in Probability and Statistics. Lecce, Italy.

[2026] Fifth Italian Meeting on Probability and Mathematical Statistics. Palermo, Italy.

[2026] Bayesian Modeling and Computation Workshop. Padova, Italy.

[2025] ISBA Webinar, Invited Discussion on: A. Horiguchi, C. Chan, L. Ma (2025, with B. Franzolini).

[2025] BISP 14 [Bayesian Inference in Stochastic Processes]. Milan, Italy.

[2025] BAYSM 2025 [Bayesian Young Statisticians Meeting] (Winners of the Blackwell-Rosenbluth Award, online).

[2025] Int. Conf. on Recent Developments in the Techniques of Bayesian Paradigm. Varanasi, India.

[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 Int. Conf. ERCIM WG, Comput. and Methodol. Stat.]. 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 Int. Conf. ERCIM WG, Comput. and Methodol. Stat.]. London, UK (online).

[2019] IISA Conference 2019 [International Indian Statistical Association]. Mumbai, India.

[2019] Second Italian Meeting on Probability and Mathematical Statistics. Vietri sul Mare, Italy.

Contributed Presentations

[2025] BNP14 [International Conference on Bayesian Nonparametrics]. Los Angeles, USA.

[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

[2026] ISBA 2026 [International Society of Bayesian Analysis]. Nagoya, Japan.

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

SOFTWARE

Statistical Software and Programming Languages: R, Python, SAS, Stan, Mathematica.

Public Software [GitHub Repositories]

- **EPglm:** R code for expectation propagation in generalized linear models.
- **SEP-BNP:** R code for separately exchangeable Bayesian nonparametric models.
- **MSSP:** R code for multivariate species sampling processes.
- **GARP:** R code for graph-aligned random partition model.
- **EPprobit-SN:** R code for efficient expectation propagation for Bayesian probit models.
- **ERC:** R code for Entropy regularization in probabilistic clustering.
- **Dynamic-Probit-EP:** R code for expectation propagation for the smoothing distribution in dynamic probit.
- **Dynamic-Probit-PFMVB:** R code for variational inference for the smoothing distribution in dynamic probit.