

Niccolo Anceschi, Ph.D.

Postdoctoral Associate - Duke University (Durham, NC) - Department of Statistical Science
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Profile and Key Competencies

- Statistician with research focus on Bayesian methods, high-dimensional inference, and interpretable statistical modeling for mixed-measurement data. Methodological contributions include scalable approximate inference (variational methods, MCMC), latent structure recovery and dimension reduction for multi-study/multi-view data integration.
- Applied interdisciplinary collaborations with Merck Sharp & Dohme scientists, and with academic researchers in environmental health, toxicology, and ecology – including simulation-based power assessment in exposure studies & spanning publication-oriented research and statistical consulting.
- Solid foundation in scientific computing and simulation, with extensive R and C++ programming, focused on efficient and accessible code for statistical modeling and inference.
- Strong communicator with 10+ invited and contributed talks – instructor and teaching assistant for Bachelor-level classes – active peer reviewer for scientific journals in statistics and applied fields.

Work Experience

Oct 2022 - Present

Postdoctoral Associate in Statistics, Duke University

Research Area: Development of novel statistical methods for inferring latent structure in high-dimensional, complex, and structured data

Mentors: Amy Herring & David Dunson

Sep 2019 - Dec 2024

Teaching Appointments

Course Instructor: Duke University (AY 2024/25)

Teaching Assistant: University of Bergamo (AY 2021/22) and Bocconi University (AY 2019/20, 2020/21, 2021/22)

Jun 2017 - Jul 2018

Pricing Analyst, brumbrum S.p.A.

Job Description: Development of efficient and robust algorithms for competitive data-driven asset pricing, based on highly-noisy data

Industry: Used Car e-commerce

Education

Sep 2018 - Jan 2023

Ph.D. in Statistics with honors (*cum laude*), Bocconi University

Topic: High-dimensional Bayesian inference for binary data

Advisors: Daniele Durante & Giacomo Zanella

Oct 2014 - Apr 2017

M.Sc. in Physics with honors (*cum laude*), University of Milan

Topic: Emergence of biodiversity and the definition of species in ecological communities (at Padua University)

Aug 2014 - Sep 2014

Visiting Student, University of Colorado Boulder

Oct 2010 - Apr 2014

B.Sc. in Physics, University of Milan

Publications

- ▶ Anceschi N., Rigon T., Zanella G. & Durante D. (2026) Optimal and computationally tractable lower bounds for logistic log-likelihoods, *Accepted on Biometrika* (arXiv:2410.10309)
- ▶ Anceschi N., Ferrari F., Mallick H. & Dunson D. (2026) Bayesian joint additive factor models for multiview learning, *Biometrics, Volume 82, Issue 3, September 2026*
- ▶ Poworoznek E., Anceschi N., Ferrari F. & Dunson D. (2025) Efficiently resolving rotational ambiguity in Bayesian matrix sampling with matching, *Bayesian Analysis, Advance Publication, 1-22, 2025*
- ▶ Anceschi N., Fasano A., Durante D. & Zanella G. (2023) Bayesian conjugacy in probit, tobit, multinomial probit and extensions: a review and new results, *Journal of the American Statistical Association, 118 (542), 1451-1469*
- ▶ Anceschi N., Hidalgo J., Plata. C., Bellini T., Maritan A. & Suweis S. (2019) Neutral and niche forces as drivers of species selection, *Journal of Theoretical Biology, 483, 109969*

Preprints & Working Papers

- ▶ Anceschi N., Huayta J., Meyer J., Dunson D., & Herring A. (2026+) Testing additivity in lead and benzo[a]pyrene-induced neurodegeneration within *Caenorhabditis elegans* toxicological assays, *arXiv:2608.20496*
- ▶ Presman R., Anceschi N., Huayta J., Meyer J. & Herring A. (2026+) Order-restricted Bayesian ordinal regression for the modeling of neuron degeneration in *Caenorhabditis elegans*, *arXiv:2606.23358*
- ▶ Mauri L., Anceschi N., & Dunson D. (2026+) Spectral decomposition-assisted multi-study factor analysis, *arXiv:2502.14600*
- ▶ Anceschi N., Fasano, A., Franzolini B. & Rebaudo G. (2026+) Scalable expectation propagation for generalized linear models, *arXiv:2407.02128*

Refereed Conference Proceedings

- ▶ Anceschi N., Fasano, A. & Rebaudo G. (2023) Expectation propagation for the smoothing distribution in dynamic probit. *Bayesian Statistics, New Generations New Approaches - BAYSM 2022*
- ▶ Fasano, A., Anceschi N., Franzolini, B. & Rebaudo G. (2023) Efficient computation of predictive probabilities in probit models via expectation propagation, *Book of Abstracts and Short Papers - CLADAG 2023, 449-452*

Public Softwares

R package **logitPQbound** : code for *optimal lower bounds for logistic log-likelihoods*

R package **jafar** : code for *Bayesian joint additive factor models for multiview learning*

R package **BayesRank** : code for *Bayesian rank-based isotonic regression for ordinal variables*

GitHub repository **BaP-Pb-additivity** : code for *testing additivity in chemical mixtures*

GitHub repository **TobitSUN** : code for *Bayesian conjugacy in probit, tobit, and multinomial probit*

GitHub repository **EPglm** : R code for *Scalable expectation propagation for generalized linear models*

Teaching

- Course Instructor, *B.Sc. course The Mathematics of Regression*, Duke University (AY 2024/2025)
 - 48 undergrad students from mixed majors – supervising 2 teaching assistants for grading
 - Prepared lectures, course materials, weekly assignments, midterms & final exams
 - Managed course website, delivered in-person lectures, & held hybrid office hours
- Teaching Assistant, *B.Sc. course Statistics*, Università degli studi di Bergamo (AY 2021/2022)
 - 32 undergrad students in economics majors
 - Held online classes, exercise sessions & office hours. Graded exams
- Teaching Assistant, *B.Sc. course Computer Science II*, Bocconi University (AY 2020/2021, 2021/2022)
 - ~ 50 undergrad students in math & computer sciences major
 - Prepared problem sets & solutions. Held hybrid exercise sessions & office hours. Graded exams
- Teaching Assistant, *B.Sc. course Theoretical Computer Science*, Bocconi University (AY 2019/2020)
 - 23 undergrad students from mixed backgrounds & majors
 - Prepared problem sets & solutions. Held in-person exercise sessions & office hours. Graded exams

Conference Presentations & Talks

Invited

- Dec 2025 CMStats Computational and Methodological Statistics (London, UK)
- Aug 2025 JSM Joint Statistical Meetings (Nashville, US)
- Mar 2025 ENAR Spring Meeting of the International Biometric Society (New Orleans, US)
- Jul 2024 ISBA World Meeting of the International Society of Bayesian Analysis (Venice, IT)
- Dec 2023 CMStats Computational and Methodological Statistics (Berlin, DE) [virtual]
- Jun 2023 IISA International Indian Statistical Association Conference (Golden, US)
- Apr 2023 LiPH Laboratory of Interdisciplinary Physics, University of Padua (Padua, IT)

Contributed

- Jul 2024 ISEC International Statistical Ecology Conference (Swansea, UK)
- Aug 2023 JSM Joint Statistical Meetings (Toronto, CA)
- Apr 2022 BNP Networking Event of the Bayesian Nonparametric Section of ISBA (Nicosia, CY)
- Jun 2021 ISBA@CIRM Workshop - Satellite event of the 15th World Meeting of the International Society of Bayesian Analysis (Marseille, FR)

Posters

- May 2024 PIC International Congress of Combustion By-Products and their Health Effects (Durham, US)
- Jun 2022 ISBA World Meeting of the International Society of Bayesian Analysis (Montréal, CA)

Editorial Work

Ad-hoc reviewer for:

- *Journal of Computational and Graphical Statistics*
- *Computational Statistics and Data Analysis*
- *Journal of Machine Learning Research*
- *Electronic Journal of Statistics*
- *Annals of Applied Statistics*
- *Statistics and Public Policy*
- *Bayesian Analysis*
- *Biometrics*

Awards

- First Runner up BioPharm Junior Researcher Paper 2024
- Biometrics 2024 Excellent Referee Award
- Travel Award, *ISBA* 2024 World Meeting (Venice, IT)
- Travel Award, *ISBA* 2022 World Meeting (Montréal, CA)
- Travel Award, *BNP* 2022 Networking Event (Nicosia, CY)
- Ph.D. Scholarship, Bocconi University (Milan, IT)

Other Skills

- Programming: *R*, *C++*, *Python*, *Mathematica*, *GitHub*
- Languages: *English (fluent)*, *Italian (native speaker)*