

Niccolo Anceschi

Department of Statistical Science, Duke University
214 Old Chemistry, Durham, NC 27708
niccolo.anceschi@duke.edu
<https://niccoloanceschi.github.io/>

Current Position

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

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
Advisors: Samir Suweis & Jorge Hidalgo (Padua University)

Aug 2014 - Sep 2014

Visiting Student, University of Colorado Boulder

Research Project at Soft Materials Research Center

Oct 2010 - Apr 2014

B.Sc. in Physics, University of Milan

Topic: Liquid-crystal phases in racemic mixtures of DNA oligomers
Advisors: Alberto Vailati & Tommaso Bellini

Work Experience

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

Publications

- ▶ 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

Submitted Papers

- ▶ Anceschi N., Ferrari F., Mallick H. & Dunson D. (2024+) Bayesian joint additive factor models for multiview learning, *arXiv:2406.00778*
- ▶ Anceschi N., Fasano, A., Franzolini B. & Rebaudo G. (2024+) Scalable expectation propagation for generalized linear models, *arXiv:2407.02128*
- ▶ Poworoznek E., Anceschi N. Ferrari F. & Dunson D. (2021) Efficiently resolving rotational ambiguity in Bayesian matrix sampling with matching, *arXiv:2107.13783*
- ▶ Anceschi N., Rigon T., Zanella G. & Durante D. (2024+) Optimal lower bounds for logistic log-likelihoods, *arXiv:2410.10309*

Working Papers

- ▶ Anceschi N., Stolf F., Tikhonov G., Ovaskainen O. & Dunson D. - Enhanced borrowing for modeling rare species occurrences via tree-structured factor models.
- ▶ Mauri L., Anceschi N., & Dunson D. - Fast and accurate factor pre-estimation for multi-study data.
- ▶ Kulkarni S, Anceschi N., Ferrari F & Mallick H. - Realistic multi-omics data simulator for reliable validation of novel methodologies.

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
- ▶ Fasano A., Rebaudo G. & Anceschi N. (2022) Bayesian inference for the multinomial probit model under Gaussian prior distribution, *Book of short papers - SIS 2022*, 871-876

Teaching

- ▶ Course Instructor, *B.Sc. course The Mathematics of Regression*, Duke University (AY 2024/2025)
 - 48 undergrad students, 2 TAs for grading assignments
- ▶ Teaching Assistant, *B.Sc. course Statistics*, Università degli studi di Bergamo (AY 2021/2022)
 - 32 undergrad students, economics majors.
 - Held online exercise sessions & online office hours
- ▶ Teaching Assistant, *B.Sc. course Computer Science II*, Bocconi University (AY 2020/2021, 2021/2022)
 - ~ 50 undergrad students, math & computer sciences major
 - Prepared problem sets & solution handouts
 - Held hybrid exercise sessions & in-person/online office hours
- ▶ Teaching Assistant, *B.Sc. course Theoretical Computer Science*, Bocconi University (AY 2019/2020)
 - 23 undergrad students, elective class (mixed backgrounds)
 - Prepared problem sets & solution handouts
 - Held in-class exercise sessions & in-person office hours

Public Softwares

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

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

Editorial Work

- Ad-hoc reviewer:
- *Biometrics*
 - *Computational Statistics and Data Analysis*
 - *Journal of Computational and Graphical Statistics*
 - *Statistics and Public Policy*

Conferences Presentations, Seminars & Schools

Invited

- 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*)

Schools

- Jul 2019 Random Graphs: Bocconi Summer School in Advanced Statistics and Probability (*Como, IT*)
- Jul 2016 Summer School on Atomistic Simulation Techniques, SISSA (*Trieste, IT*)
- Mar 2015 46th IFF Spring School on Functional Soft Matter (*Jülich, DE*)

Memberships & Affiliations

- American Statistical Association (*ASA*)
- International Society for Bayesian Analysis (*ISBA*)
- Italian Statistical Society (*SIS*)
- Bayesian Learning Laboratory (*BayesLab*) at Bocconi Institute for Data Science and Analytics (*BIDSA*)

Other Skills

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

Hobbies

Rock Climbing, Skiing, Hiking, Reading