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., Rigon T., Zanella G. & Durante D. (2024+) Optimal lower bounds for logistic log-likelihoods, *arXiv:2410.10309*

‣ 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*

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. - Mimesis: 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