Nicolas Bianco

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Research interests

Bayesian inference, change-point detection, computational methods, dependent data, dynamic sparsity, high-dimensional statistics, graphical models, network data, spatial statistics, time series analysis, time-varying parameter, variable selection, variational approximations.

Current position

Postdoctoral Researcher in Statistics and Data Science — Karlsruhe, Germany
Methods for Big Data, Scientific Computing Center, Karlsruhe Institute of Technology — *15/09/2024 - ongoing*

Past positions

Postdoctoral Researcher in Statistics — Barcelona, Spain
Universitat Pompeu Fabra and Barcelona School of Economics — *25/05/2023 - 30/06/2024*

Education

PhD in Statistics — Padova, Italy
Dept. of Statistical Sciences, University of Padova — *01/10/2019 - 31/12/2022*
Thesis defense: 2 May 2023
Thesis title: Variational inference for high-dimensional dynamic models
Supervisor: Mauro Bernardi; Co-supervisior: Daniele Bianchi

Master degree in Statistical Sciences — Padova, Italy
Dept. of Statistical Sciences, University of Padova — *01/10/2017 - 30/09/2019*

Erasmus+ — Lisbon, Portugal
ISEG – Instituto Superior de Economia e Gestão — *01/02/2017 - 01/07/2017*

Bachelor degree in Statistics for Economics and Business — Padova, Italy
Dept. of Statistical Sciences, University of Padova — *01/10/2014 - 30/09/2017*

Visiting periods

Queen Mary university of London — London, UK
School of Economics and Finance — *01/10/2022 – 23/12/2022*

Research

Articles (*authors in alphabetical order*)

1. Bernardi M., Bianchi D., **Bianco N.** (2024). Variational inference for large Bayesian vector autoregressions. *Journal of Business and Economic Statistics*, 42(3), 1066–-1082.
2. Bernardi M., Bianchi D., **Bianco N.** (2024). Dynamic variable selection in high-dimensional predictive regressions. *arXiv preprint arXiv:2304.07096.*
3. Bernardi M., Bianchi D., **Bianco N.** (2023). Smoothing volatility targeting. *arXiv preprint arXiv:2212.07288.*
4. Ahmad T., Ahmad I., Arshad I. A., **Bianco N.** (2022). A comprehensive study on the Bayesian modelling of extreme rainfall: A case study from Pakistan. *International Journal of Climatology, 42(1), 208-224.*

Conference proceedings (*authors in alphabetical order*)

1. Bernardi M., Bianchi D., **Bianco N.** (2022). Bernoulli-Gaussian model for dynamic sparsity in time varying parameter regression. *Proceedings of the 36th International Workshop on Statistical Modeling, Trieste, 91–96.*
2. Bernardi M., Bianchi D., **Bianco N.** (2021). Variational inference for sparse vector autoregression. *Proceedings of the 35th International Workshop on Statistical Modeling, Bilbao, 19–24.*

In preparation

1. **Bianco N.**, Cappello L.. Computationally efficient segmentation for non-stationary time series.
2. **Bianco N.**, Castiglione C.. Improving Bayesian semiparametric regression via increasing shrinkage priors.
3. Carlesi P.A., **Bianco N.**, Castiglione C., Bernardi M.. Dynamic quantiles graphical models.

Conferences & Seminars

Invited talks. 52nd edition of the Scientific Meeting of the Italian Statistical Society; 24th International Conference on Computational Statistics; 2022 World Meeting of the International Society for Bayesian Analysis; 14th International Conference of the ERCIM WG on Computational and Methodological Statistics (online).
Contributed talks. Greek Stochastics ν'; BSE Summer Forum 2023 workshop on Macroeconomics and Policy Evaluation; 10th Italian Congress of Econometrics and Empirical Economics; 12th European Seminar on Bayesian Econometrics; 36th International Workshop on Statistical Modeling; 35th International Workshop on Statistical Modeling (online); 2021 World meeting of the International Society for Bayesian Analysis (online); 13th International Conference of the ERCIM WG on Computational and Methodological Statistics (online).
Invited seminars. Series of seminars on Quantitative Methods at CUNEF University, Madrid (10/07/2024); Series of seminars on Econometrics at EDHEC Business School, Lille (18/10/2023).

Teaching experience

Course instructor — Barcelona, Spain
Barcelona School of Economics — *05-06/03/2024*
Course: Introduction to Python and R programming for Data Science (professional intensive course)

Teaching assistant — Barcelona, Spain
Barcelona School of Economics — *16/10/2023 - 22/12/2023*
Course: Foundations of Data Science (master in economics and finance)

Academic tutor — Padova, Italy
Dept. of Statistical Sciences, University of Padova — *01/10/2018 – 15/06/2019*
Courses: Calculus (bachelor degree), Statistics (advanced course, master degree)

Supervising experience

1. Master thesis, Data Science Methodology course, Barcelona School of Economics.
   Title: *Bayesian graphical modeling with external network information for optimal portfolio construction.*
   Students: Harry Morley, Ross Fleming, Rafael Gallegos Cortés.
   Other supervisor: Jack Jewson (Monash University)
2. Master thesis in Business Analytics, Dept. of Statistical Sciences, University of Bologna.
   Title: *Portfolio selection: graphical modeling with external network data and Student's-t distribution for efficient asset allocation.* Student: Eugenia Massa.
   Other supervisors: Simone Tiberi (University of Bologna), Jack Jewson (Monash University)
3. Master thesis in Statistics, Dept. of Statistical Sciences, University of Padova.
   Title: *Variable selection for Poisson regression model via mean field variational Bayes.*
   Student: Daniele Cugnigni. Other supervisor: Mauro Bernardi (University of Padova)

Awards and Grants

Juan de la Cierva fellowship — Barcelona, Spain
Postdoctoral research grant provided by Agencia Estatal de Investigación — *20/06/2024*
(I formally withdrew from the research grant for mobility reasons)

Best PhD thesis in Statistics — Rome, Italy
Prize awarded by Italian Statistical Association (SIS) — *20/05/2024*

Best poster award — Padova, Italy
Conference: Statistical Methods and Models for Complex Data — *23/09/2022*

Student travel award — Montreal, Canada
Conference: Meeting of the International Society for Bayesian Analysis (ISBA) — *26/06/2022*

Best Master thesis in Mathematical Statistics — Rome, Italy
Prize awarded by Italian Statistical Association (SIS) — *24/06/2020*

Best project — Milan, Italy
Stats Under the Stars – V edition — *18/06/2019*

Best project — Padova, Italy
Hackathon on speech recognition - Unox S.p.A — *25/05/2018*

Participation in scientific projects

1. **Complex Graphical Models for Biological Network Science (COMBINERS)**.
   Funding: Ministry of University and Research – PRIN Call 2022
   PI: Francesco Stingo (University of Florence)
   I am participating as a former member of the University of Padova research unit.

Service at the department

PhD students representative Padova, Italy
Dept. of Statistical Sciences, University of Padova *01/10/2019 - 31/12/2022*

National Program for Scientific Degrees (PNLS) tutor Padova, Italy
Dept. of Statistical Sciences, University of Padova *01/10/2017 - 30/09/2018*

Organisation of dissemination activities

Venetonight - Researchers' night Padova, Italy
Sponsored by the University of Padova *30/09/2022*

Hackathon "HackTheGene" Padova, Italy
Sponsored by the Dept. of Statistical Sciences, University of Padova *17/09/2022*

StatisticAll Treviso, Italy
Sponsored by the Italian Statistical Society (SIS) and Italian National Statistics institute (ISTAT) *2015 - 2017*

Other

- **Technologies**: R/Rstudio (advanced), C++ (advanced), LaTex (advanced), Python (intermediate), Matlab (intermediate), Julia (basic)
- **Languages**: Italian (native); English (fluent); Spanish (intermediate); Portuguese (basic)