Daniele Durante: Curriculum Vitae

CONTACT INFORMATION

Department of Decision Sciences Sciences
Bocconi University
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RESEARCH INTERESTS

Network Science, Bayesian Nonparametrics, Neuroscience, High Dimensional Inference, Statistical Machine Learning, Tensor Factorization, Stochastic Processes.

POSITIONS

Assistant Professor at the Department of Decision Sciences of Bocconi University. Milan, Italy. 01/09/2017— Today.

Past Academic and Business Positions

Post-doctoral Research Fellow. Università degli Studi di Padova, Department of Statistical Sciences. Padova, Italy. (02/2016 — 08/2017).

Adjunct Professor. Department of Economics and Management, Ca' Foscari University. Venice, Italy. (Academic year 2015/2016).

Visiting Research Scholar. Department of Statistical Sciences, Duke University. Durham, NC, USA. (03/2014 — 02/2015).

Research Assistant at Università degli Studi di Padova (10/2012 — 01/2013) and Ca' Foscari University (05/2011 — 09/2011).

Teaching Assistant. Università degli Studi di Padova, Department of Statistical Sciences. Exercises and small lectures for undergraduates. (10/2011—10/2012).

Freelance Researcher providing statistical consulting for business. (07/2011—07/2012).

EDUCATION

Università degli Studi di Padova, Padova, Italy

Ph.D. in Statistical Sciences. Department of Statistical Sciences (2013–2016)

- Ph.D. Thesis Topic: *Bayesian nonparametric modeling of network data*
- Advisors: Bruno Scarpa and David B. Dunson

M.S. in Statistical Sciences. Department of Statistical Sciences (2010–2012)

- M.S. Thesis Topic: *Locally adaptive Bayesian covariance regression*
- Advisors: Bruno Scarpa and David B. Dunson

B.S. in Statistics, Economy and Finance. Department of Statistical Sciences (2007–2010)

AWARDS

Academic

- Awarded the *2017 JASA Theory & Methods Invited Paper*. American Statistical Association. (2017).
- Winner of the *David P. Byar Award*. Biometrics Section of the American Statistical Association. (2015).
- Winner of the *ISBA Lifetime Members Junior Researcher Award*. International Society for Bayesian Analysis. (2014).
- Winner of the *Grand Data Challenge* of the 2014 International Conference on Social Computing, Behavioral-Cultural Modeling & Prediction. (2014).
- Winner of the *Laplace Award*. Section on Bayesian Statistical Sciences of the American Statistical Association. (2013).

Outreach

- *My Statistician Friend*. Honorable mention in the video contest sponsored for the International Year of Statistics 2013. (2013).
  Link of the video: `https://www.youtube.com/watch?v=yU2qQywUnnU`.
- *The Statistical Calendar*. Awarded as the best outreach project of Statistics in the multimedia competition: "La statistica e la professione di statistico: idee per la promozione e la diffusione". ISTAT, Rome. (2012).
  Link of the project: `http://cal.stat.unipd.it/eng/index.html`.

Funding

Research Projects

- *"Predicting Performance from Network Data"*. ARO ($742,129). PI: David Dunson. Contribution and position: Member of the research group, support in writing the proposal and help in conceiving the key ideas.
- *"Bayesian Learning for High-Dimensional Low Sample Size Data"*. ONR ($448,913). PI: David Dunson. Contribution and position: Member of the research group.
- *"Bayesian Inference on Brain Network Data"*. Università degli Studi di Padova (€25,244). PI: Bruno Scarpa. Contribution and position: Member of the research group, support in writing the proposal and help in conceiving the key ideas.

Publications

Refereed Journals

1. Durante, D., Mukherjee, N. and Steorts, R. C. (2017). Bayesian Learning of Dynamic Multilayer Networks. *Journal of Machine Learning Research*, 18, 1–29.
2. Wang, L., Durante, D., Jung, R. E. and Dunson, D. B. (2017). Bayesian Network-Response Regression. *Bioinformatics*, 33, 1859–1866.
3. Durante, D. (2017). A Note on the Multiplicative Gamma Process. *Statistics & Probability Letters*, 122, 198–204.
4. Durante, D., Paganin, S., Scarpa, B. and Dunson, D. B. (2017). Bayesian Modelling of Networks in Complex Business Intelligence Problems. *Journal of the Royal Statistical Society: Series C*, 66, 555–580.
5. Durante, D. and Dunson, D. B. (2016). Bayesian Inference and Testing of Group Differences in Brain Networks. *Bayesian Analysis*. To appear (doi: 10.1214/16-BA1030).
6. Durante, D., Dunson, D. B. and Vogelstein, J. T. (2016). Nonparametric Bayes Modeling of Populations of Networks. *Journal of the American Statistical Association*. To appear with discussion (doi: 10.1080/01621459.2016.1219260).
7. Durante, D. and Dunson, D. B. (2016). Locally Adaptive Dynamic Networks. *Annals of Applied Statistics*, 10, 2203–2232.
8. Durante, D. and Dunson, D. B. (2014). Nonparametric Bayes Dynamic Modelling of Relational Data. *Biometrika*, 101, 883–898.
9. Durante, D. and Dunson, D. B. (2014). Bayesian Dynamic Financial Networks with Time-Varying Predictors. *Statistics & Probability Letters*, 93, 19–26.
10. Durante, D., Scarpa, B. and Dunson, D. B. (2014). Locally Adaptive Factor Processes for Multivariate Time Series. *Journal of Machine Learning Research*, 15, 1493–1522.
11. Durante, D. and Dunson, D. B. (2014). Bayesian Logistic Gaussian Process Models for Dynamic Networks. *Artificial Intelligence and Statistics (AISTAT). Journal of Machine Learning Research-Workshop & Proceedings*, 33, 194–201.
12. Durante, D., Scarpa, B. and Dunson, D. B. (2013). Locally Adaptive Bayesian Multivariate Time Series. *Advances in Neural Information Processing Systems (NIPS)*, 26, 1664–1672.

Refereed Conference Proceedings and Book Chapters

1. Durante, D. and Dunson, D. B. (2016). Bayesian Nonparametric Modeling of Dynamic International Relations. *Proceedings of the XLVIII conference of the Italian Statistical Society*, 1–13.

2. Durante, D. and Dunson, D. B. (2015). Bayesian Regression with Network Predictors. *Statistics and Demography: the Legacy of Corrado Gini*, 1–7.

3. Durante, D., Vidotto, D. and Vettori, S. (2015). La Bussola del Ricercatore Statistico. In Campostrini S., Ghellini, G. and Tuzzi, A. (eds.) *Con senso di misura, riflessi statistici da alcuni allievi di Lorenzo Bernardi*. Cleup, 25–36. [English version].

4. Durante, D. (2014). Analysis of Italian Financial Market via Bayesian Dynamic Covariance Models. In Lanzarone, E. and Ieva, F. (eds.) *The contribution of Young Researchers to Bayesian Statistics*. Springer, 63, 171–177.

5. Durante, D. (2012). Qualitative Latent Variables: a Comparison Between SEM and LCA. *Quaderni di Statistica*, 14, 97–100.

Manuscripts Under Review

1. Durante, D., Canale, A. and Rigon, T. (2017). A Nested Expectation–Maximization Algorithm for Latent Class Regression Models. *arXiv:1705.03864*. (Submitted).

2. Canale, A., Durante, D. and Dunson, D. B. (2017). Convex Mixture Regression for Quantitative Risk Assessment. *arXiv:1701.02950*. (Submitted).

3. Rigon, T. and Durante, D. (2017). Logit Stick-Breaking Priors for Bayesian Density Regression. *arXiv:1701.02969*. (Submitted).

4. Russo, M., Durante, D. and Scarpa, B. (2017). Bayesian Inference on Group Differences in Multivariate Categorical Data. *arXiv:1606.09415*. (Submitted).

5. Rigon, T., Durante, D. and Torelli, N. (2016). Bayesian Semiparametric Modelling of Contraceptive Behavior in India via Sequential Logistic Regressions. *arXiv:1405.7555*. (Submitted).

6. Durante, D., Daianu, M., Jahanshad, N., Thompson, P. M. and Dunson, D. B. (2015). Unifying Inference on Brain Network Variations in Neurological Diseases: The Alzheimer's Case. *arXiv:1510.05391*. (To be submitted).

Research Press

Press Releases on my Research and Findings

• Creative people have better interconnected brains. *Duke Today* —— • Do you have a 'superbrain'? Study finds creative people have better connected brains. *Daily Mail* —— • Brain scans could reveal if children are naturally creative - and help them pick a career. *The Mirror* —— • Sei creativo? Allora il tuo cervello è più connesso. *Il Bo Magazine*.

Presentations

Seminars

• Convex mixture regression for quantitative risk assessment. *Department of Decision Sciences, Bocconi University*. Milan, Italy (May 4, 2017) —— • Bayesian nonparametric modeling of network data. *School of Basic Sciences, EPFL*. Lausanne, Switzerland (January 19, 2017), and *Department of Decision Sciences, Bocconi University*. Milan, Italy (February 2, 2017), and *Department of Statistical Science, UCL*. London, UK (February 8, 2017), and *Department of Statistical Science, Duke University*. Durham, USA (February 17, 2017) —— • Recent advances and open questions in statistical modeling of structural brain networks. *Department of Psychology, Università degli Studi di Padova*. Padova, Italy (November 7, 2016) —— • Bayesian nonparametric modeling of networks. *Department of Statistical Science, Università Cattolica*. Milan, Italy (February 18, 2016) —— • Bayesian connectomics. *Department of Mathematics and Statistics, Lancaster University*. Lancaster, UK (October 8, 2015) —— • Locally Adaptive DYnamic (LADY) networks. *Department of Statistical Sciences, Università degli Studi di Padova*. Padova, Italy (May 28, 2015).

Invited Presentations

- Statistical models and predictive strategies for dynamic face–to–face contact networks. *BISP10*. Milan, Italy (June 14, 2017) —— • Bayesian nonparametric modeling of populations of networks. *JSM2017*. Baltimore, USA (August 2, 2017) and *BNP11*. Paris, France (June 30, 2017) —— • Bayes and graphs. *ARS'17*. Naples, Italy (May 16, 2017) —— • Bayesian modeling of networks in business intelligence. *Isaac Netwon Institute*. Cambridge, UK (August 25, 2016) —— • Bayesian connectomics. *ISBA2016*. Sardinia, Italy (June 18, 2016) —— • Nonparametric Bayes modeling of dynamic international relations. *SIS2016*. Salerno, Italy (June 8, 2016) —— • Bayesian regression with network predictors. *SIS2015*. Treviso, Italy (September 10, 2015) —— • Inference on group differences in brain networks. *JSM2015*. Seattle, USA (August 13, 2015) —— • The compass for young statisticians. *Una giornata in ricordo di Lorenzo Bernardi*. Padova, Italy (May 15, 2015) —— • Bayesian inference on network data. *ARS'15*. Capri, Italy (April 29, 2015) —— • Friends in joy and sorrow: Analysis of the 2007-2012 global financial crisis via Bayesian nonparametric dynamic networks. *SBP 2014*. Washington DC, USA (April 4, 2014).

Contributed Presentations and Poster Presentations

- Nonparametric Bayes dynamic modeling of relational data. *ISBA2014*. Cancun, Mexico (July 15, 2014) —— • Bayesian logistic Gaussian process models for dynamic networks. *AISTAT2014*. Reykjavik, Iceland (April 22, 2014) —— • Locally adaptive Bayesian multivariate time series. *JSM2013*. Montreal, Canada (August 6, 2013) —— • Analysis of Italian financial market via Bayesian covariance regression. *BAYSM2013*. Milan, Italy (June 5, 2013) —— • Qualitative latent variables: a comparison between SEM and LCA. *Methods and models for latent variables*. Naples, Italy (May 17, 2012).

Service to Profession

Positions in Academic Societies

J-ISBA chair elect, since January 2017. Y-SIS board member, since January 2017.

Referee Service

JRSS-B; Annals of Statistics; Biometrics; Annals of Applied Statistics; Computational Statistics & Data Analysis; AISTAT; SBP Conference; Quaderni di Statistica.

Organization of Scientific Events

- Joint organizer of *"StartUpResearch"*. Siena, 25-27 June, 2017 (Satellite event of the SIS intermediate scientific meeting)
- Joint organizer of *"Stats under the Stars II"*. Salerno, 7-8 June, 2016 (Satellite event of the SIS intermediate scientific meeting)
- Chair of the event *"Stats under the Stars"*. Padova, 8-9 September, 2015 (Satellite event of the SIS intermediate scientific meeting)
- Joint organizer of *"Statistica e Data Science per il Business"*. Padova, 8 September, 2015 (Satellite event of the SIS intermediate scientific meeting)

Teaching Experience

Ca' Foscari University

Department of Economics and Management

- Data Analysis [ET2005]. (Academic year 2015/2016).

Università degli Studi di Padova

Department of Statistical Sciences

- Advanced Case Studies [SECS-S/01]. (Academic year 2016/2017).
- Introduction to network analysis (specialist lectures during the class: Analisi dei Dati e Data Mining). (Academic years 2015/2016 and 2014/2015).

Updated September 10, 2017