Daniele Durante: Curriculum Vitae

CONTACT INFORMATION

Department of Decision Sciences Sciences
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Date of birth: 28/02/1988

RESEARCH INTERESTS

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

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 (01/2013 — 04/2013) and Ca' Foscari University (02/2012).

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

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 and Research Awards

- Winner of the *Mitchell Prize*. International Society for Bayesian Analysis. (2018).
- Winner of the *2018 Ph.D. Thesis Award in Statistics*. Italian Statistical Society. (2018).
- 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

Videos and Multimedia Projects

- *The Geometry of Relationships*. A TEDx talk on network data and models. (2018). Link of the video: `https://www.youtube.com/watch?v=mcHz_ycaC6Q`.
- *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`.

Press Releases and Videos on my Research

- 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*.

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., Canale, A. and Rigon, T. (2018+). A Nested Expectation–Maximization Algorithm for Latent Class Models with Covariates. *Statistics & Probability Letters*. In press.
2. Canale, A., Durante, D. and Dunson, D. B. (2018+). Convex Mixture Regression for Quantitative Risk Assessment. *Biometrics*. In press.
3. Rigon, T., Durante, D. and Torelli, N. (2018+). Bayesian Semiparametric Modelling of Contraceptive Behavior in India via Sequential Logistic Regressions. *Journal of the Royal Statistical Society: Series A*. In press.
4. Russo, M., Durante, D. and Scarpa, B. (2018). Bayesian Inference on Group Differences in Multivariate Categorical Data. *Computational Statistics & Data Analysis*, 126, 136–149.
5. Canale, A., Durante D., Paci L. and Scarpa, B. (2018). Connecting Statistical Brains. *Significance*, 15, 38–40.
6. Durante, D. and Dunson, D. B. (2018). Bayesian Inference and Testing of Group Differences in Brain Networks. *Bayesian Analysis*, 13, 29–58.
7. Durante, D., Dunson, D. B. and Vogelstein, J. T. (2017). Nonparametric Bayes Modeling of Populations of Networks. *Journal of the American Statistical Association*, 112, 1516–1530 (with discussion).
8. Durante, D., Mukherjee, N. and Steorts, R. C. (2017). Bayesian Learning of Dynamic Multilayer Networks. *Journal of Machine Learning Research*, 18, 1–29.

9. Wang, L., Durante, D., Jung, R. E. and Dunson, D. B. (2017). Bayesian Network-Response Regression. *Bioinformatics*, 33, 1859–1866.

10. Durante, D. (2017). A Note on the Multiplicative Gamma Process. *Statistics & Probability Letters*, 122, 198–204.

11. 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.

12. Durante, D. and Dunson, D. B. (2016). Locally Adaptive Dynamic Networks. *Annals of Applied Statistics*, 10, 2203–2232.

13. Durante, D. and Dunson, D. B. (2014). Nonparametric Bayes Dynamic Modelling of Relational Data. *Biometrika*, 101, 883–898.

14. Durante, D. and Dunson, D. B. (2014). Bayesian Dynamic Financial Networks with Time-Varying Predictors. *Statistics & Probability Letters*, 93, 19–26.

15. 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.

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. *Proceedings of the XLVII Conference of the Italian Statistical Society*, 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. 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.

5. 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.

6. 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.

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

Manuscripts Under Review

1. Durante, D. (2018). Conjugate Bayes for Probit Regression via Unified Skew-Normals. *arXiv:1802.09565*. (Submitted).

2. Durante, D. and Rigon, T. (2018). A Note on Quadratic Approximations of Logistic Log-likelihoods. *arXiv:1711.06999*. (Submitted).

3. Rigon, T. and Durante, D. (2018). Logit Stick-Breaking Priors for Bayesian Density Regression. *arXiv:1701.02969*. (Submitted).

Presentations

Seminars

- Unified skew-normals for Bayesian probit regression and classification via BARTS. *Department of Computer and Information Science,* **Linköpings Universitet**. Linköping, Sweden (November 7, 2018) —— • Conjugate Bayes for probit regression via unified skew-normals. *Department of Statistical Sciences,* **University of Padova**. Padova, Italy (June 8, 2018) —— • 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 Mathematics and Statistics,* **University College of Dublin**. Dublin, Ireland (October 5, 2017), *Department of Statistical Science,* **Duke University**. Durham, USA (February 17, 2017), and *Department of Statistical Science,* **University College of London**. London, UK (February 8, 2017), and *Department of Decision Sciences,* **Bocconi University**. Milan, Italy (February 2, 2017), and *School of Basic Sciences,* **EPFL**. Lausanne, Switzerland (January 19, 2017) —— • Recent advances and open questions in statistical modeling of structural brain networks. *Department of Psychology,* **University of 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).

Invited Presentations

- Convex mixture regression for quantitative risk assessment. *IISA 2017.* Hyderabad, India (December, 2017) and *ERCIM 2017.* London, UK (December, 2017) —— • Statistical models and predictive strategies for dynamic face–to–face contact networks. *BISP10.* Milan, Italy (June, 2017) —— • Bayesian nonparametric modeling of populations of networks. *JSM2017.* Baltimore, USA (August, 2017) and *BNP11.* Paris, France (June, 2017) —— • Bayes and graphs. *ARS'17.* Naples, Italy (May, 2017) —— • Bayesian modeling of networks in business intelligence. *Isaac Netwon Institute.* Cambridge, UK (August, 2016) —— • Bayesian connectomics. *ISBA2016.* Sardinia, Italy (June, 2016) —— • Nonparametric Bayes modeling of dynamic international relations. *SIS2016.* Salerno, Italy (June, 2016) —— • Bayesian regression with network predictors. *SIS2015.* Treviso, Italy (September, 2015) —— • Inference on group differences in brain networks. *JSM2015.* Seattle, USA (August, 2015) —— • The compass for young statisticians. *Una giornata in ricordo di Lorenzo Bernardi.* Padova, Italy (May, 2015) —— • Bayesian inference on network data. *ARS'15.* Capri, Italy (April, 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, 2014).

Contributed Presentations and Poster Presentations

- Conjugate Bayes for probit regression via unified skew-normals. *ISBA2018.* Edinburgh, Scotland (June, 2018) —— • Nonparametric Bayes dynamic modeling of relational data. *ISBA2014.* Cancun, Mexico (July, 2014) —— • Bayesian logistic Gaussian process models for dynamic networks. *AISTAT2014.* Reykjavik, Iceland (April, 2014) —— • Locally adaptive Bayesian multivariate time series. *JSM2013.* Montreal, Canada (August, 2013) —— • Analysis of Italian financial market via Bayesian covariance regression. *BAYSM2013.* Milan, Italy (June, 2013) —— • Qualitative latent variables: a comparison between SEM and LCA. *Methods and models for latent variables.* Naples, Italy (May, 2012).

Service to Profession

Positions in Academic Societies

J-ISBA Chair, since January 2018. Y-SIS Chair, since January 2018.

Editorial Boards

Associate Editor for the *Journal of Computational and Graphical Statistics* since 2018.

Referee Service

Journal of the Royal Statistical Society, Series B; Annals of Statistics; Annals of Applied Statistics; Biometrics; Biometrika; Bayesian Analysis; Journal of the American Statistical Association; Computational Statistics & Data Analysis; Statistics and Computing; Artificial Intelligence and Statistics; Journal of Computational and Graphical Statistics; Journal of Multivariate Analysis; Network Science.

Organization of Scientific Events

- Joint organizer of the *"Bayesian Young Statisticians Meeting BAYSM2018"*. Warwick, 2-3 July, 2018
- Member of the scientific committee of *"SIS 2018: 49th Scientific Meeting of the Italian Statistical Society"*. Palermo, 20-22 June, 2018
- 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

Bocconi University

Department of Decision Sciences

- Machine Learning. (Academic year 2018/2019).
- Advanced Mathematics and Statistics – Module 2 (Advanced Statistical Methods). (Academic year 2017/2018).
- Statistics – Module 1 (Theory and Methods). (Academic years 2017/2018).
- Applied Survival (Duration) Data Analysis [Ph.D. course]. (Academic years 2017/2018).
- Topics in Statistical and Machine Learning [Ph.D. course]. (Academic years 2017/2018 and 2018/2019).

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).
