

Sonia Petrone – Curriculum vitae

(March 2023)

- SONIA PETRONE

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Bocconi University,
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- **Education**

1989 PhD in Statistics, University of Trento (*University Consortium Trento-Pavia-Milano-Bocconi*). Thesis: Implications of de Finetti subjective probability in statistical inference and decision problems.

1984 *Laurea cum laude* in Discipline Economiche e Sociali, Bocconi University, Milano. Thesis on: Bayesian nonparametric approach to empirical Bayes problems.

- **Current and past academic positions**

- Full Professor of Statistics, Bocconi University, Department of Decision Sciences, Milano.

Previously Associate Professor of Statistics at Bocconi University since 2001, with *idoneita'* (national qualification) as Full Professor since 2002.

Associate Professor at the University of Insubria, Department of Economics (1998-2001). Assistant Professor of Statistics, University of Pavia, Department of Economics and Quantitative Methods (1991-1998).

- Fellow of the Bocconi Institute of Data Science (BIDSA)
- Elected Fellow of the European Laboratory for Learning and Intelligent Systems (**ELLIS**; 2019-) <https://ellis.eu/>
- Director, PhD in Statistics, Bocconi University, Milano (2011-2018)
Vice-director and curricula director, PhD in Statistics, Bocconi University (2004-2011).
- Director of the Bocconi Summer School in Advanced Statistics and Probability (from 2017).
- Member of Bocconi University Evaluation Committee for Human Resources (since 2013).
- Delegate of the Dept of Decision Science for the Bocconi Dean on Diversity and Inclusion (since 2020).
- Member of the Senior Hiring Committee, Dept of Decision Science, Bocconi (since June 2020).
Member of the Bocconi University Research Council (2012).

- **Research interests**

- Bayesian statistics: theory, methods and applications with focus on prediction, its foundational role in Bayesian statistics, its methodological and applied implications.

Specific research areas include

- Bayesian foundations; Prediction and predictive characterizations; subjective probability; exchangeability; partial and Markov exchangeability; limit theorems.
 - Bayesian nonparametrics, including mixtures, hierarchical models, density estimation, nonparametric regression, clustering, statistical machine learning.
 - Bayesian and frequentist properties of Bayesian procedures. Empirical Bayes.
 - Dynamic models and prediction. State-space models for time series analysis.

- **Professional service**

President of the International Society for Bayesian Analysis (**ISBA**) 2014; President Elect 2013, Past President 2015.

Chair of the ERC (European Regional Council), Bernoulli Society (2023-2024)

Member of the IMS Council (ex-officio: 2020-2022; elected member: 2011-2014).

Member (ex-officio) of the Committee on Special Lectures of the Institute of Mathematical Statistics (**IMS**) (2020-2022).

Member of the IMS Committee on Nominations, 2016-2017

Chair (10/2012–07/2014) and Member (01/2011–09/2012) of the IMS Committee on Travel Awards.

Member of the European Regional Committee (ERC) of the Bernoulli Society (from 2019)

Member of the ISBA Fellows Committee (2019-2022)

Member of the ISBA Zellner Medal Committee (2019 - 2021)

Member of the ISBA Committee on Named Lectures, 2017-2018 and 2023-2024.

Member of the Constitution and Bylaws Committee of ISBA (2012-2017).

Elected member of the Board of Directors of ISBA (International Society for Bayesian Analysis) 2002–2004 and 2008–2010.

Chair (2015) and member (2009) of the DeGroot Prize Committee, ISBA.

Chair (2010) and member (2012) of the Savage Award Committee, ISBA.

Promoter and founding member of the permanent group “SISbayes” on Bayesian Statistics of the Italian Statistical Society (SIS).

- **Honors and awards**

IMS Medallion Lecturer, 2018.

ISBA Foundational Lecture, 2016.

Fellow of the International Society for Bayesian Analysis (ISBA) (elected in 2016).

Fellow of the IMS (Institute of Mathematical Statistics)

Elected member of International Statistical Institute (ISI), 2020.

Lindley Prize 2010 from ISBA, with Sara Wade and Silvia Mongelluzzo.

Research Award for Excellence in Research and Research Profile, Bocconi University (2002, 2003, 2009-2010; 2011-2012; 2013-2014; 2015-2016). Research Award: 2021.

- **Editorial service.**

Editor of *Statistical Science* (2020-2022)

Co-Editor of *Bayesian Analysis* (2010-2014).

Associate Editor of *Statistical Science* (2014-2019)

Referee for many scientific journals, including *Annals of Statistics*; *Journal of the American Statistical Society*; *Journal of the Royal Statistical Society, Series B*; *Biometrika*; *Scandinavian Journal of Statistics*; *Neural Computation*; *Bernoulli*; *Statistics and Probability Letters*; *Statistics and Computing*, *Journal of Econometrics*, *Journal of the Royal Statistical Society, Series C*; *Journal of Time Series Analysis*, *Journal of Computational and Graphical Statistics*; *Journal of Nonparametric Statistics*; *Statistical Methods and Applications*; *Journal of Computational Statistics and Data Analysis*; *Brazilian Journal of Probability and Statistics*; ; *Communications in Statistics*; *Journal of Agricultural, Biological, and Environmental Statistics*; *AISTATS Proc.*

Project Evaluator and reviewer:

ERC 2018 Evaluations (European Research Council Starting, Consolidator, Advanced and Synergy Grant Calls 2018)

EPSRC Panel, mid-term review of the Alan Turing Institute (ATI), UK (2019).

National Science Foundation (USA); Netherlands Organization for Scientific Research (NWO); Conicyt (Chile); MIUR.

Member of the External Advisory Board of the EPSRC CDT (Centre for Doctoral Training) in Modern Statistics and Statistical Machine Learning (Oxford University and Imperial College London).

- **Invited research visits**

- October-December 2019, University of California at Irvine, USA
- December 2018, University of Texas at Austin, USA.
- October-November 2018 and January 2019, Dept of Statistics, Oxford University, UK
- October 10-30, 2016. Dept of Statistics, Duke University.
- June 29-July 2, 2015. Research Program on Bayesian Nonparametrics: Synergies between Statistics, Probability and Mathematics, SAMSI, USA.
- June 17-21, 2013, Research Programme in Bayesian Nonparametrics, Lorentz Center, Leiden.
- July 1-9, 2011, Research Programme in Bayesian Nonparametrics, Veracruz, Mexico.
- November 2011, CREST, ENSAE, Paris.

- University of Kent, October 2011.
- January 8-25, 2011, Departamento de Estadística, Pontificia Universidad Católica de Chile, Santiago, Chile.
- November 2-15, 2010. Department of Pure Mathematics and Mathematical Statistics, Statistical Laboratory, University of Cambridge.
- January 2010 CEREMADE, Université Paris Dauphine.
- January 2009 Department of Statistics, Stanford University.
- Research Programme in Bayesian Nonparametrics, Torino, 21 June-5 July 2009.
- October-November 2008 Instituto de Matemática, Federal University of Rio de Janeiro.
- November 2007 and February 2008 Department of Statistics, Duke University.
- February 2004 Institute of Statistics and Decision Sciences, Duke University.
- January 2004 Indian Statistical Institute, Delhi.
- November-December 1999 Department of Statistics, Stanford University.
- September 1998 Department of Mathematics, University of Oslo.
- October-November 1997 Department of Statistics, Cornell University.
- October 1996 Central Economics and Mathematics Institute, Academy of Sciences, Moscow
- October-December 1995 Department of Statistics, University of Washington.
- January-February 1995 Department of Mathematics, University of Nottingham, UK.
- September-December 1993 Institute for Mathematics and its Applications (IMA), University of Minnesota.

• Invited seminars

Stanford University, Nov 2019; Univ California Irvine (UCI), October 2019; UCLA, Nov 2019, Univ. Texas Austin (Dec 2018), Univ Oxford (Oct 2018), UT Irvine (Oct 2019), UCLA (Oct 2018), Stanford Univ (Stanford Biostatistics Workshop, Nov 2020)
 University of Amsterdam, May 2017. Oxford-Warwick Lectures, May 2015.
 Swiss Statistics Seminars, University of Bern, Swiss, Nov 2014; University of Cambridge; Stanford University; University of Bristol; M.D. Anderson Cancer Center, Houston (Texas); Università della Svizzera Italiana (Lugano); University of Linz; Vrije Universiteit of Amsterdam; Duke University; North Carolina State University; Indian Statistical Institute (Delhi); Institut Henri Poincaré (Paris); Carnegie Mellon University; University of Toronto; Cornell University; University of Washington; Central Economics and Mathematics Institute (Academy of Sciences, Moscow); University of Oslo; Università di Trento; Università di Roma "La Sapienza"; Università di Pavia; Università di Padova; Università di Venezia; Università dell'Insubria; IAMI-CNR (Milano), and others.

• Invited talks at scientific meetings(1999–current year)

Recent plenary talks

- Statistics Conference in honor of Aad van der Vaart's 60th birthday, 17-21 June 2019, Leiden (invited speaker, plenary)
- IMS MEDALLION LECTURE (IMS 2018 meeting, July 2-6, 2018, Vilnius, Lithuania).
- International Workshop: Bridging Parametrics and Nonparametrics, May 22-24, 2017, Oslo (invited speaker, plenary).
- FOUNDATIONAL LECTURE, ISBA World Meeting, June 13-17, 2016, Sardinia, Italy.

- Latent Variables Conference, October 14-16, 2016, University of South Carolina, USA (invited speaker, plenary)
- Bayes Lectures, May 28-29, 2014, Edinburgh, UK (keynote).
- Bayesian workshop: 2nd Italian-French Statistics Seminar on Bayesian learning theory for complex data modeling (keynote invited speaker)
- Oberwolfach Workshop on Foundations of Bayesian Inference for Complex Statistical Models. Mathematisches Forschungsinstitut Oberwolfach, 2-8 May 2021. (*Virtual conference*)
- Machine Learning Summer School, Tuebingen, June 28-July 10, 2020 (invited lecturer) - *Virtual*
- Sixth international conference on social network analysis (ARS'17), 16-17 May, 2017, Naples (invited speaker).
- Bayesian methods for networks, July 25-27, 2016, Isaac Newton Institute for Mathematical Sciences, Cambridge, UK (Invited speaker, plenary).
- DALI (Data Learning and Inference), March 30-April 1, 2016, Sestri Levante, Italy.
- Joint Statistical Meeting (JSM), August 8-13, 2015. Seattle, US. Invited speaker.
- 10th Conference on Bayesian Nonparametrics, June 22-26, 2015, Raleigh, NC, USA. Invited speaker.
- 11th O-Bayes workshop. 1-5 June 2015, Valencia. Invited discussant.
- Statistics and society in the new information age: challenges and opportunities. December 28-30, 2014, Colombo, Sri Lanka. Invited speaker.
- World Meeting of the International Society for Bayesian Analysis (ISBA), 14-18 July, 2014, Cancun.
- Fifth IMS-ISBA joint meeting MCMSki IV and Bayesian Nonparametrics workshop, Chamonix, 6-8 January 2014. Invited speaker.
- 9th Conference on Bayesian Nonparametrics. Amsterdam, June 10-14, 2013. Invited speaker.
- Conference "Big data: theoretical and practical challenges" - May, 14-15 2013, Institut Henri Poincaré (Paris). Invited speaker.
- Workshop on Recent advances in statistical inference: theory and case studies. Padova, 21-23 March 2013. Invited discussant.
- International Conference on Bayesian Theory and Applications, January 06-10, 2013, Varanasi, India. Invited speaker.
- Workshop on "Likelihood, approximate likelihood and nonparametric statistical methods for complex applications", Venezia, 8-9 Oct 2012. Invited speaker.
- Workshop on "Bayesian nonparametrics beyond theorems", Padova, 5 Oct 2012.
- International workshop on "Structure and Uncertainty", Bristol, September 24-27, 2012. Invited Speaker.
- 8th World Congress in Probability and Statistics, IMS and Bernoulli, Istanbul, July 9-14, 2012. Invited speaker (contributed session).
- ISBA 2012 World Meeting, Kyoto, June 25-29, 2012. Invited speaker.
- 11th Brazilian Statistics Bayesian Meeting, March, 18-22, 2012. Amparo, Sao Paulo, Brazil. Invited speaker.
- Information theory and statistics for large alphabets. Banff International Research Station (BIRS), Banff, Canada, 23-28 October 2011. Invited speaker.

- 8th Workshop on Bayesian Nonparametrics, Veracruz, Mexico, June 26-30, 2011 and Research Programme in Bayesian Nonparametrics, Veracruz, July 1-9, 2011. Invited speaker.
- 45-ma Riunione Scientifica della Società Italiana di Statistica (SIS), Padova, 16-18 June 2010. Invited discussant.
- ISBA 2010 World Meeting, Benidorm, Spain, June 3-8, 2010. Invited tutorial.
- European Meeting of Statisticians (EMS), Toulouse, July 20-24, 2009. Invited speaker.
- TIES 2009 (20th Annual Conference of The International Environmetrics Society, a Section of the ISI and Graspa Conference 2009), Bologna, July 5-9, 2009. Invited speaker.
- 7th Workshop on Bayesian Nonparametrics, Torino, 21-25 June. Invited speaker.
- Ninth Brazilian Bayesian Meeting, Maresias, Brazil, February 27-March 1, 2008. Invited speaker.
- CLAGAD2007, Macerata, September 13-16, 2007. Invited speaker.
- Bayesian Nonparametric Regression: Theory, Methods and Applications, Isaac Newton Institute for Mathematical Sciences, Cambridge, August 7-10, 2007. Invited speaker.
- International Indian Statistical Association (IISA) and International Conference on Statistics, Probability and related Areas, Cochin, India, January 2-5, 2007. Invited speaker.
- Valencia and ISBA Eighth World Meeting on Bayesian Statistics, Benidorm, Spain, June 1-7 2006. Invited discussant.
- Second Latin American Congress on Bayesian Statistics (COBAL2), San Jose' del Cabo, Mexico, February 2005. Invited speaker.
- IV Workshop on Bayesian Nonparametrics, June 13-16, 2004, Rome. Invited speaker.
- XLII Scientific Meeting of the Italian Statistical Society, 9-11 June, 2004, Bari. Invited speaker.
- World Meeting of the International Society for Bayesian Analysis (ISBA), May 23-27, 2004, Vina del Mar, Chile. Invited speaker.
- Fourth International Workshop on Objective Bayesian Methodology, Aussois, France, 15-20 June, 2003. Invited speaker.
- Return predictability and portfolio allocation, October 28, 2002, Bocconi University, Milano. Invited discussant.
- Stochastic Analysis and applications in Control, Statistics and Financial Modeling. Georgian Academy of Science and Tbilisi State University, Tbilisi, Georgia, September 1-7, 2002. Invited speaker.
- 23rd European meeting of Statisticians, Funchal, 2001, August, 13-19. - Bayesian non-parametric summit, University of Michigan Business School, Ann Arbor, July 27 - August 2, 2001. Invited speaker.
- Workshop on Models and Inference in Highly Structured Stochastic Systems: recent developments and perspectives, Luminy, France, 13-18 November 2000. Invited discussant.
- European conference on Spatial and Computational Statistics. Ambleside, UK, 17-21 September 2000. Invited speaker.
- International Workshop on Bayesian non parametric methods, Reading, UK, July 1999. Invited speaker.
- International Workshop on Objective Bayesian Methodology, Valencia, June 1999; Invited discussant.

• **Conference organization & Scientific Committee (1999–current year):**

Member of the scientific committee of numerous meeting, and among the promoters of the series of international workshops on BAYESIAN NONPARAMETRICS (BNP) and on BAYESIAN INFERENCE FOR STOCHASTIC PROCESSES (BISP).

- ISBA World Meeting 2021 (2020, postponed as a *virtual conference* in 2021 for COVID-19) <https://events.stat.uconn.edu/ISBA2021/>, China (member of the scientific committee)
- SIS 2019: Smart Statistics for Smart Applications, June 18-21, 2019, Milano (invited to organize a session)
- European Meeting of Statisticians (EMS), 24-28 July 2017, Helsinki (Invited to organize a session).
- 11th conference on Bayesian Nonparametrics (BNP11), 26-30 June 2017, Paris (member of the Scientific Committee).
- 10th workshop on Bayesian Inference in Stochastic Processes (BISP10), June 13-15, 2017, Milano, Italy (Member of the Scientific Committee and Chair, Local Organizing Committee).
- International conference on Recent Developments in Bayesian Theory and Stochastic Processes, in honor of Pietro Muliere, June 12, 2017, Milano (Chair, local and scientific committee).
- 9th workshop on Bayesian Inference in Stochastic Processes (BISP9), Istanbul, Turkey, June 14-16, 2015. Member of the Scientific Committee.
- Scientific Meeting 2014, Italian Statistical Society (SIS), June 11-13, Cagliari. Member of the Scientific Committee.
- International Conference on Bayesian Theory and Applications, January 6-10, 2013, Varanasi, India.
- International workshop on "The impact of statistical thinking in economics and life sciences", Milano, 3-15 Sept 2012. Scientific Committee Chair and Organizing Committee.
- ISBA 2012 World Meeting, Kyoto, June 25-29, 2012. Invited to organize a session and invited speaker.
- 4rd International Conference of the ERCIM WG on Computing & Statistics (ERCIM'11), 17-19 December 2011, University of London, UK. Invited to organize a track (three sessions) on Bayesian nonparametrics.
- 7th Conference on Complex Data Modeling and Computationally Intensive Statistical Methods (S.Co.), September 19-21, 2011, Padova. Member of the Scientific Committee.
- Seventh Workshop on Bayesian Inference in Stochastic Processes (BISP). Universidad Carlos III de Madrid, Getafe, Spain, September, 1-3, 2011. Member of the Scientific Committee.
- 3rd International Conference of the ERCIM WG on Computing & Statistics (ERCIM'10), 10-12 December 2010, London, UK. Invited to organize a track (four sessions) on Bayesian nonparametrics.
- ISBA 2010 World Meeting, Benidorm, Spain, June 3-8, 2010. Member of the Program Committee.
- Thirteenth International Conference on Artificial Intelligence and Statistics May 13-15, 2010, Chia, Italy. Referee for the Program chairs.
- Statistical Methods for the analysis of large data-sets, Specialized Statistical Conferences of the Italian Statistical Society (SIS), Pescara, September 23-25, 2009. Invited to organize a session.

- S.Co. 2009 (Statistics for complex systems), Milano, September 14-16, 2009. Member of the Scientific Committee.
- Sixth Workshop on Bayesian Inference in Stochastic Processes (BISP06), Bressanone, June 2009. Member of the Scientific Committee.
- BISP05, Valencia, Spain, June 2007. Member of the Scientific Committee.
- S.Co. 2007 (Statistics for complex systems), Venice, September 6-8, 2007. Invited to organize a section.
- Fifth workshop on Bayesian Nonparametrics, Jeju, Korea, June 18-21, 2006. Member of the Scientific Committee.
- 25rd European Meeting of Statisticians, Oslo, July 24-28th, 2005. Invited to organize a session.
- Fourth Workshop on Bayesian inference in stochastic processes (BISP04), Varenna, Italy, June 2005. Member of the Scientific Committee.
- 2nd IMS-ISBA joint meeting on MCMC: the past, the present and the future of Gibbs sampling, Bormio, Italy, January 2005. Invited to organize a session.
- International Conference on Bayesian Statistics and its Applications, Banaras Hindu University, Varanasi, India, January 6-8, 2005. Invited to organize a session.
- IV Workshop on Bayesian Nonparametrics, Rome, June 13-16, 2004. Member of the Scientific Committee.
- S.Co. 2003: Modelli complessi e metodi computazionali intensivi per la stima e la previsione, Treviso, September 4-6, 2003. Invited to organize a session.
- Third Workshop on Bayesian Inference in Stochastic Processes (BISP03), La Manga, Spain, 15-17 May, 2003. Member of the Scientific Committee.
- Second Workshop on Bayesian Inference in Stochastic Processes (BISP02), Varenna, May 31 - June 2, 2001. Member of the Scientific and chair of the Organizing Committee.
- S.Co. (Modelli complessi e metodi computazionali intensivi per la stima e la previsione), Venezia, 27-29 September 1999. Invited to organize a session.

- **Research funding** (1999–current year)

Elected (2019) Fellow of the European Laboratory for Learning and Intellingent Systems (ELLIS) <https://ellis.eu/>

- *Individual grants*

Award and Research Grant *Excellence in Research*, Bocconi University (2 years research grants): 2002 and 2003; 2009 and 2010; 2011 and 2012; 2013 and 2014; 2015 and 2016. Research award: 2021.

- *National grants: Progetti di Ricerca scientifica di rilevante Interesse Nazionale (PRIN – Research Projects of Relevant National Interest):*

PRIN 2015SNS29B (2017-2019) ‘Bayesian Nonparametrics: Theory and Applications’ (PI for Bocconi University; National coordinator: I. Pruenster).

PRIN 2010-2012 ‘Bayesian methods: theoretical developments and new applications’. (National coordinator: E. Regazzini).

PRIN 2007-2009 ‘Spatio-temporal models for statistical analysis of environmental systems’. (National coordinator: A. Fasso’).

PRIN 2002-2005 ‘Random probability measures with applications in Bayesian nonparametrics’. (National coordinator: E. Regazzini).

PRIN 1998-2001 ‘Bayesian inference: nonparametric analysis, parametrization, model choice and computations’. (National coordinator: W. Racugno).

– *International grants*

- European Science Foundation Scientific Programme on “Highly Structured Stochastic Systems” (HSSS), 1997-2000.

- European Union’s research network TMR (Training and Mobility of Researchers) “Statistical and Computational Methods for the Analysis of Spatial Data” (coordinated by G.O.Roberts, Lancaster. 1997-2000).

– *Project coordinator*

- *Ricerca di base*, Bocconi University, 2004-2006: “Forecasts in dynamic models with latent variables and application in finance”.

- *Ricerca di base*, Bocconi University, 2002-2004: “Approximation of stochastic processes and financial applications”.

- *Progetto di Ricerca d’Ateneo* (F.A.R.) 2000, Insubria University: “Bayesian inference for stochastic processes, with application to financial series”

- F.A.R. 1999, Insubria University: “Inference and forecasts in complex systems: methodological and computational aspects”.

• Teaching

S.P. is strongly committed in fostering research activity of younger scholars, as supervisor or co-advisor of many undergraduate and master students, and with an active role in the development of the PhD in Statistics at Bocconi University, of which she has been Vice-Director and Curricula Responsible (2004-2011) and Director (2011-2018).

Recent and current PhD students.

Wei Zhang

Hristo Sariev (co-advisor, 2020)

Michele Peruzzi (internal advisor, 2019)

Lorenzo Cappello (internal advisor 2018)

Marta Crispino (int. advisor, 2018)

Silvia Missiroli (int. advisor. 2017).

Sajid Ali (co-advisor. 2016)

Maxim Nazarov (2014)

Polina Sporysheva (2014)

Sara Wade (2013)

Silvia Mongelluzzo (2013)

Lorenzo Trippa (co-advisor)

Michele Guindani (co-advisor)

Graduate courses – (academic year 2020-2021)

Time Series Analysis for Economic and Financial Data (in English; Master, Bocconi University).

Statistics and Probability (in English; Master in Data Science and Business Analytics, Bocconi)

Bayesian Theory II (in English; PhD in Statistics & Computer Science, Bocconi University).

Bayesian methods for complex data (in English; PhD in Statistics & Computer Science, Bocconi University).

Past teaching activity.

Other undergraduate and graduate courses I have been teaching include:

- Time Series Analysis (State Space Processes) (in English; PhD in Statistics, Bocconi Univ.)
- Mixture Models (in English; PhD in Statistics, Bocconi)
- Topics in Statistical Learning (in English; PhD in Statistics, Bocconi)
- Data Analysis (graduate, Master, Bocconi University, 2009-2010).
- Introduction to Bayesian Econometrics (in English; PhD in Statistics, Bocconi)
- Multivariate Analysis (*Laurea quadriennale*, Bocconi University, 2001-2002, 2002-2003, 2003-2004).
- Advanced Statistics (Statistics II) (*Laurea quadriennale*, University of Pavia and University of Insubria, 1998-1999, 1999-2000, 2000-2001).
- Statistics I (*Laurea quadriennale* - undergraduate) University of Pavia (1995-1998) University of Insubria (1998-2001); Bocconi University (2001-2007).

I have been teaching the first undergraduate course of Statistics for students in Economics for many years, at the University of Pavia (1995-1998) and the University of Insubria (1998-2001), with 600-900 students sitting in my class (*with streaming connection from different rooms - much earlier than in the covid-19 pandemic!*) each year. In spite of the huge number of students, I managed to renew these courses and introduce laboratories on computer-assisted real data analysis, an experience that also led to the reorganization of the 18 classes of the course of Statistics I at Bocconi University, when I joined it in 2001.

• Publications

– Books

- Petris, G., Petrone, S., Campagnoli, P. (2009) *Dynamic linear models with R*. Springer-Verlag, New York.
- Grigoletto, M., Lisi, F. and Petrone, S. (Editors) (2013). *Complex Models and Computational Methods in Statistics*. Springer, Series: Contributions to Statistics. DOI: 10.1007/978-88-470-2871-5.

– arXiv manuscripts

- Rigon, T., Scarpa, B. and Petrone, S. (2020). Enriched Pitman-Yor processes.
<https://arxiv.org/abs/2003.12200>
- Zhang, W., Cribben, I., Petrone, S. and Guindani, M. (2020). Bayesian time-varying tensor vector-autoregressive models for dynamic effective connectivity.
<https://arxiv.org/abs/2106.14083>

– Peer reviewed articles and discussions in journals and volumes

- Fortini, S. and Petrone, S. (2023). Prediction-based uncertainty quantification for exchangeable sequences. *Philosophical Transaction of the Royal Society A*, **381**, <https://doi.org/10.1098/rsta.2022.0142>
- Sariev, H., Fortini, S. and Petrone, S. (2023) Infinite-color randomly reinforced urns with dominant colors. *Bernoulli*, **29**, 132 - 152.
- Fortini, S., Petrone, S. and Sariev, H. (2021) Predictive Constructions Based on Measure-Valued PólyaUrn Processes. *Mathematics*, Special Issue: Bayesian Predictive Inference and Related Asymptotics, Festschrift for Eugenio Regazzini's 75th Birthday, **9**, 2845 - 1-19.
- Fasano, A., Rebaudo, G., Durante, D. and Petrone, S. (2021). A Closed-Form Filter for Binary Time Series. *Statistics and Computing*, **31**.
<https://link.springer.com/article/10.1007/s11222-021-10022-w>
- Fortini, S. and Petrone, S. (2020). Quasi-Bayes properties of a procedure for sequential learning in mixture models. *JRSS, Series B*, **82**, 1087–1114.
- Fortini, S., Petrone, S. and Sporysheva, P. (2018). On a notion of partially conditionally identically distributed sequences. *Stochastic Processes and their Applications*, **128**, 819-846.
- Fortini, S. and Petrone, S. (2017). Predictive Characterization of Mixtures of Markov Chains, *Bernoulli*, **23**, 1538-1565.
- Fortini, S. and Petrone, S. (2015). Predictive distribution: de Finetti's view. *Wiley StatsRef-Statistics Reference Online*.
- Antoniano-Villalobos, I. , Nazarov, M. and Petrone, S. (2015). A Nonparametric Latent Space Model for Dynamic Relational Networks. In: *Proceedings of SIS 2015. Statistics and Demography: the Legacy of Corrado Gini*. C. Crocetta, ISBN: 9788867874521, Treviso, Italy, September 9-11, 2015
- Petrone, S., Rousseau, J. and Scricciolo, C. (2014). Bayes and Empirical Bayes: do they merge?. *Biometrika*, **101**, 285–302.
- Petrone, S., Rizzelli, S., Rousseau, J., Scricciolo, C. (2014). Empirical Bayes methods in classical and Bayesian inference. *Metron*, **72**, 201–215.
- Wade, S., Walker, S. and Petrone, S. (2014). A Predictive Study of Dirichlet Process Mixture Models for Curve Fitting. *Scandinavian Journal of Statistics*, **41**, 580–605.
- Wade, S.K., Dunson, D.B., Petrone, S. and Trippa, L. (2014). Improving Prediction from Dirichlet Process Mixtures via Enrichment. *Journal of Machine Learning Research*, **15**, 1041–1071.
- Fortini, S. and Petrone, S. (2012). Hierarchical reinforced urn processes. *Statistics and Probability Letters*, **82**, 1521–1529.
- Fortini, S. and Petrone, S. (2012). Predictive construction of priors in Bayesian nonparametrics. *Brazilian Journal of Probability and Statistics*, **26**, 423–449.
- Wade, S., Mongelluzzo, S. and Petrone, S. (2011). An enriched conjugate prior for Bayesian nonparametric inference. *Bayesian Analysis*, **6**, 359-386. (Awarded the Lindley Prize from ISBA, 2010).
- Petris, G. and Petrone, S. (2011). State Space Models in **R**. *Journal of Statistical Software*, **41**.

- Petrone, S. and Veronese, P. (2010). Feller operators and mixture priors in Bayesian nonparametrics. *Statistica Sinica*, **20**, 379–404.
- Petrone, S., Guindani, M. and Gelfand, A.E. (2009). Hybrid Dirichlet mixture models for functional data. *Journal of the Royal Statistical Society, Ser. B*, **71**, 755–782.
- Trippa, L., Bulla, P. and Petrone, S. (2009). Extended Bernstein Prior via Reinforced Urn Processes. *Annals of the Institute of Statistical Mathematics*, **63**, 481–496.
- Gelfand, A.E., Guindani, M. and Petrone, S. (2007). Bayesian nonparametric modelling for spatial data using Dirichlet processes (with discussion). In *Bayesian Statistics 8*, J.M. Bernardo, M.J. Bayarri, J.O. Berger, A.P. Dawid, D. Heckerman, A.F.M. Smith and M. West (Eds). Oxford University Press, 175–200.
- Hjort, N.L. and Petrone, S. (2007). Nonparametric quantile inference with Dirichlet processes. In *Advances in Statistical Modeling and Inference. Essays in Honor of Kjell A Doksum*, Vijay Nair Ed., 463–492.
- Petrone, S. (2007). Discussion on "Approximating interval hypothesis: p-values and Bayes factors", by J. Rousseau. In *Bayesian Statistics 8*, J.M. Bernardo, M.J. Bayarri, J.O. Berger, A.P. Dawid, D. Heckerman, A.F.M. Smith and M. West (Eds). Oxford: Oxford University Press.
- Petrone, S. (2004). On the role of mixtures in Bayesian nonparametrics. *Atti della XLII Riunione Scientifica della Società Italiana di Statistica*, Vol.1, 257–268, Cleup, Padova.
- Petrone, S. (2003). A predictive point of view on Bayesian nonparametrics. In *Highly Structured Stochastic Systems*, P. Green, N. Hjort and S. Richardson Eds, Oxford University Press.
- Petrone, S. and Wasserman, L. (2002). Consistency of Bernstein polynomial posteriors. *Journal of the Royal Statistical Society, Ser. B*, **64**, 79–100.
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