Pier Giovanni Bissiri

Curriculum Vitae

Department of Statistical Sciences "Paolo Fortunati"
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Present position

11/2019– **Tenure–track assistant professor (senior)**, *at Department of Statistical Sciences, University of Bologna*, Bologna, Italy.

Previous positions

10/2017–11/2019 **Research associate**, *at School of Mathematics, Statistics and Physics, Newcastle University*, Newcastle, UK, supervisor: prof. Emilio Porcu .
topic: Positive definite functions in geostatistics

01/2015–09/2017 **Postdoctoral position (renewed on 01/01/2017)**, *at the Dep. of Economics, Management and Statistics, University of Milano–Bicocca*, Milan, Italy, supervisor: prof. A. Ongaro.
topic: discrete Bayesian nonparametric models

04/2014–12/2014 **Postdoctoral position**, *at IMATI, Institute of Applied Mathematics and Information Technology of the National Research Council (CNR)*, Milan, Italy.

01/2014–03/2014 **Collaborator**, *at the Department of Economics, Management and Statistics of the University of Milano–Bicocca*, Milan, Italy.

01/2010–12/2013 **Postdoctoral position (renewed on 01/01/2012)**, *at the Department of Economics, Management and Statistics of the University of Milano–Bicocca*, Milan, Italy.
topic: Non parametric Bayesian inference

12/2007–11/2009 **Two years research grant 'Master and Back'**, *funded by the Region of Sardinia, Italy*, at the Department of Mathematics of the University of Cagliari, Italy.

Qualification for professorship

10/02/2014 **National scientific qualification to function as full professor** in Italian Universities in Statistics, obtained for the period 05/06/2023–05/06/2034.
https://asn21.cineca.it/pubblico/miur/esito-abilitato/13%252FD1/1/5

Education

19/1/2007	**PhD in "Mathematics and Statistics"**, *Department of Mathematics at the University of Pavia*, Pavia, Italy, Curriculum: Probability and Statistics. PhD Thesis: *Statistical issues connected with finitary exchangeable sequences*, supervisor: prof. Eugenio Regazzini, Univ. of Pavia, Italy
11/07/2003	**Diploma di laurea (M.S.) in Statistics**, *University of Milano - Bicocca*, Milan, Italy, Average grade: 29,6/30. Final grade: 110/110 cum laude.
7/1999	**High School Diploma – Classical studies (Latin, Ancient Greek)**, *Liceo Ginnasio Domenico Alberto Azuni*, Sassari, Italy, Final grade: 100/100.
6/1998	**High School Diploma**, *Oxford Hills Comprehensive High School*, South Paris, Maine, U.S.A., Highest Honors.

Abroad experiences

10/2017–	Research assistant at Newcastle University, UK
07/2008–12/2009	Visiting scholar at the School of Mathematics, Statistics and Actuarial Science of the University of Kent, U.K., Prof. Stephen G. Walker.
08/1997–06/1998	EF exchange program, Harrison, ME, U.S.A.

Language knowledge

Italian	**native**
English	**very good**

Badge Bbetween Inglese C1 issued by University of Milano-Bicocca, Italy, available at this link: `https://bit.ly/2CGjVjd`

Summer schools

27/7–30/8/2003	**Mathematics Summer Course - Perugia 2003**, *organized by SMI (Scuola Matematica Interuniversitaria)*, at the University of Perugia, Italy. Courses: ○ *Probability*, prof. Kella, The Hebrew Univ., Jerusalem (grade A), ○ *Mathematical Statistics*, prof. Gilat, Univ., Tel Aviv (grade A).
25/7–14/8/2004	**Summer Course in Mathematics - Cortona 2004**, *organized by SMI (Scuola Matematica Interuniversitaria)*, at Scuola Normale Superiore in Cortona (AR), Italy. Courses: ○ *Empirical processes*, prof. J. A. Wellner, Univ. of Washington, ○ *Bayesian Statistics*, prof. E. Ragazzini, Univ. of Pavia.
3/7–23/7/2005	**Summer Course in Statistics and Calculus of Probabilities 2005**, *organized in Torgnon (AO) by Univ. Bocconi of Milan, Italy*. Course: ○ *Sequential Design and Analysis with Application to Clinical Trials* professor William F. Rosenberger (George Mason Univ.) and professor Feifang Hu (Univ. of Virginia).

30/7–17/8/2007 **Summer Course in Mathematics** - **Cortona 2007**, *organized by SMI (Scuola Matematica Interuniversitaria)*, at Scuola Normale Superiore in Cortona (AR), Italy.
Courses:
○ *Introduction to stochastic processes*, prof. P. Baldi, Univ. of Rome Tor Vergata,
○ *Point processes*, prof. P. Bremaud - EPFL (Lausanne) -ENS (Paris)

Computer knowledge

Windows, LaTeX, BibTeX, MS Office, R, JAGS, Sas, Mathematica, SPSS.

Seminars

09/03/2022 **Maynooth University, Ireland**, Department of Mathematics and Statistics, webseminar *Positive definite functions on spheres: some statistical and mathematical issues*.

12/05/2021 **Universitat Pompeu Fabra (UPF), Spain**, Department of Economic and Business, webseminar *General Bayesian inference*.

17/11/2020 **Universidad Técnica Federico Santa María, Chile**, Departamento de Matemática, webseminar *Positive definite functions on spheres: some statistical and mathematical issues*, https://youtu.be/ztiENmFxC-k.

10/02/2020 **University of Bologna, Italy**, Department of Statistical Sciences "Paolo Fortunati", *Positive definite functions on spheres: some statistical and mathematical issues*.

07/12/2018 **Newcastle University, UK**, School of Mathematics, Statistics and Physics, *Nonparametric Bayesian modelling and estimation of spatial covariance functions for global data*.

02/02/2018 **Newcastle University, UK**, School of Mathematics, Statistics and Physics, *A general framework for updating belief distributions*.

10/11/2016 **University of Milano–Bicocca, Italy**, Dep. of Economics, Management and Statistics, *A general framework for updating belief distributions*.

06/06/2014 **University of York, UK**, Department of Mathematics, *Updating probability measures with the Kullback-Leibler divergence and Bayesian inference with species sampling models*.

23/05/2014 **Newcastle University, UK**, School of Mathematics and Statistics, *Converting information into probability measures with the Kullback–Leibler divergence*.

12/08/2013 **University of Glasgow, UK**, School of Mathematics and Statistics, *Updating probability measures with the Kullback–Leibler divergence and estimating species richness with species sampling models*.

10/07/2013 **Plymouth University, UK**, School of Computing and Mathematics, *Converting information into probability measures with the Kullback–Leibler divergence*.

10/11/2011 **University of Milano–Bicocca, Italy**, Department of Statistica, *Bayesian statistics: foundational issues and species sampling models*.

16/03/2007 **University of Cagliari, Italy**, Department of Mathematics and Informatics, *A finitary approach to Bayesian statistical inference*.

| 13/07/2006 | **University of Pavia, Italy**, Department of Mathematics, *Statistical problems connected with finite exchangeable sequences*. |

Partecipation to research projects

| PRIN 2006 | *The point of view of de Finetti about the Bayes-Laplace paradigm: new methodologic developments and applications*, supported by MIUR, Italy, local unit at the Department of Mathematics, University of Pavia, national coordinator Eugenio Regazzini |

Scholarships, grants and awards

- Premio Giovani Talenti (Young Talents Award), University of Milano-Bicocca, sponsored by Accademia Nazionale dei Lincei, 2017 edition, motivation: "for his significant studies about developments of Bayesian statistics".
- *Sentinel of Science Award 2016* assigned by Publons as a recognition for the intense peer–review actvity in the field of mathematics
- Study Prize SAFI (Scuola Avanzata di Formazione Integrata, Pavia) awarded by IUSS, Pavia, Italy), 2004-2006.
- PhD scholarship at the University of Pavia, Italy, 2003-2006.

Research interests

Positive definite functions in geostatistics, functional data analysis, nonparametric Bayesian statistics, infinite and finite exchangeability, random partitions, species sampling models, posterior distributions obtained in a decision–theoretic framework, Bayesian consistency.

Teaching

a.a. 2021–2022	Lecturer of the course *Foundations of Statistics* (in English) at the PhD program in Statistics at the University of Bologna, 15 hours
a.a. 2021–2022	module *Statistics* of the course *Statistics and Data analysis* (in Italian), Master degree in Law and Economics, University of Bologna, 30 hours
2020–2021	*Statistics* (in Italian) for the Bachelor degree in *Business Administration*, University of Bologna, Italy, 88 hours, 202 students.
20019–2020	*Statistics* (in Italian) for the Bachelor degree in *Business Administration*, University of Bologna, Italy, 88 hours, 202 students.
02/2017–03/2017	Lecturer for the course *Probability: module one and two* (in English), PhD program in *Statistics and Mathematics for Finance*, University of Milano-Bicocca, Italy, 36 hours.
02/2016	Lecturer for the course *Probability module one* (in English), PhD program in *Statistics and Mathematics for Finance*, University of Milano-Bicocca, Italy, 24 hours.
02/2015–03/2015	Lecturer for the course *Probability* (in English), PhD program in *Statistics and Mathematics for Finance*, University of Milano-Bicocca, Italy, 36 hours.

10/2014–01/2015	Teaching assistance for the course *Statistics*, BSc in *Energy engineering* (150 students), Department of Mathematics, Politecnico di Milano, Italy, 28 hours.
04/2010	Teaching assistance for the courses *Statistics I* and *Statistics I and environmental statistics*, Faculty of Statistical Sciences, University of Milan–Bicocca, Italy, 15 hours.

Refereeing activity

International statistical journals

2015	Statistics, Biometrika, Statistica Sinica.
2016	Statistics (twice), Journal of Statistical Computation and Simulation (twice), Computational Statistics & Data Analysis (twice), Statistica Sinica, Journal of the Royal Statistical Society - Series B, Journal of Statistical Planning and Inference, Annals of Statistics.
2017	Journal of Statistical Computation and Simulation, Annals of Statistics, Journal of Multivariate Analysis, Journal of Statistical Computation and Simulation, Journal of the American Statistical Association (theory and methods)
2018	Biometrika
	https://publons.com/author/479537/pier-giovanni-bissiri

Funding bodies

2016	Swiss National Science Foundation

Contributed talks at international conferences

27/06/2017	11th Conference on Bayesian non parametrics, 26–30 June 2017, Paris, France. Title: "'Bayesian analysis of the Gini–Simpson index"'. Coauthor: Andrea Ongaro.

Invited talks at international conferences

01/12/2012	5th International Conference of the ERCIM WG on COMPUTING & STATISTICS (ERCIM 2012), 1-3 December 2012, Conference Centre, Oviedo, Spain. Title: "Species sampling models: consistency for the number of species". Coauthors: Andrea Ongaro, Stephen G. Walker.

Poster presentations at international conferences

11/06/2013	9th Conference on Bayesian nonparametrics, 10-14 June 2013, Amsterdam, The Netherlands, Title: "Species sampling models: estimate the number of species". Coauthors: Andrea Ongaro, Stephen G. Walker.

References

Emilio Porcu, *Khalifa University, UAE*, prof. ordinario di statistica, emilio.porcu@ku.ac.ae.
supervisor for the post–doc at Newcastle University, UK

Stephen G. Walker, *University of Texas Austin, USA*, full prof. of statistics, s.g.walker@math.utexas.edu.
coauthor

Eugenio Regazzini, *University of Pavia, Italy*, emeritus prof. of probability and mathematical statistics, eugenio.regazzini@unipv.it.
PhD thesis supervisor

Andrea Ongaro, *University of Milano Bicocca, Italy*, full prof. of statistics, andrea.ongaro@unimib.it.
supervisor for the post–docs at University of Milano Bicocca

Antonio Pievatolo, *IMATI–CNR Milano*, researcher, antonio.pievatolo@cnr.it.
supervisor for the postdoc at CNR

Publications

Publications in refereed journals

[1] Alegría, A., Bissiri, P.G., Cleanthous, G., Porcu, E. and White, P. (2021), Multivariate isotropic random fields on spheres: Nonparametric Bayesian modeling and L^p fast approximations, *Electronic Journal of Statistics*, vol. 15(1), pp.2360–2392; https://doi.org/10.1214/21-EJS1842; open access

[2] Porcu, E. and Bissiri, P.G. Tagle, F. and Soza, R. and Quintana, F. (2021), Nonparametric Bayesian modeling and estimation of spatial correlation functions for global data, *Bayesian Analysis*, Advance publication; https://doi.org/10.1214/20-BA1228;

[3] Bissiri, P.G. and Peron, A.P. and Porcu, E. (2020), Strict positive definiteness under axial symmetry on the sphere, *Stochastic Environmental Research and Risk Assessment*, vol. 34, pp.723–732; https://doi.org/10.1007/s00477-020-01796-y;

[4] Emery, X., Porcu, E. and Bissiri, P.G. (2019), A semiparametric class of axially symmetric random fields on the sphere, *Stochastic Environmental Research and Risk Assessment*, vol. 33, pp.1863–1874; https://doi.org/10.1007/s00477-019-01725-8;

[5] P.G. Bissiri and Stephen G. Walker (2019), On general Bayesian inference using loss functions, *Statistics & Probability Letters*, vol. 152, pp.89–91; https://doi.org/10.1016/j.spl.2019.04.005;

[6] P.G. Bissiri, V. Menegatto and E. Porcu (2019), Relations between Schoenberg coefficients on real and complex spheres of different dimensions, *SIGMA*, vol. 15, 004, 12 pages; https://www.emis.de/journals/SIGMA/2019/004/; open access;

[7] P.G. Bissiri and S. G. Walker (2018), A definition of conditional probability with non–stochastic information, *Entropy*, vol. 20(8), 572, http://www.mdpi.com/1099-4300/20/8/572;

[8] P.G. Bissiri, C. Holmes, S. G. Walker, A general framework for updating belief distributions (2016); *Journal of the Royal Statistical Society, series B*, vol. 78, pp.1103–1130; open access: http://onlinelibrary.wiley.com/doi/10.1111/rssb.12158/full; 69 citations on Google Scholar;

[9] R. Argiento, P.G. Bissiri, A. Pievatolo and C. Scrosati (2015), Multilevel functional principal component analysis of façade sound insulation data, *Quality and Reliability Engineering International*, vol. 31, pp. 1239–1253; http://onlinelibrary.wiley.com/doi/10.1002/qre.1843/abstract;

[10] P.G. Bissiri and A. Ongaro (2014), On the topological support of species sampling priors, *Electronic Journal of Statistics*, vol. 8, 861–882; http://projecteuclid.org/euclid.ejs/1403812155

[11] P. G. Bissiri, A. Ongaro, S. G. Walker (2013), Species sampling models: consistency for the number of species, *Biometrika*, vol. 100 (3), pp. 771–777; http://biomet.oxfordjournals.org/content/100/3/771;

[12] P. G. Bissiri, S. G. Walker (2012), On Bayesian learning via loss functions, *Journal of Statistical Planning and Inference*, vol. 142 (12), pp. 3167-3173; http://www.sciencedirect.com/science/article/pii/S0378375812002091;

[13] P.G. Bissiri, S. G. Walker (2012), Converting information into probability measures with the Kullback-Leibler divergence; *Annals of the Institute of Statistical Mathematics*, vol. 64 (6), pp. 1139-1160; http://www.springerlink.com/content/g5123r665u707n18/;

[14] P. G. Bissiri, S. G. Walker (2010), On Bayesian learning from Bernoulli observations, *Journal of Statistical Planning and Inference*, vol. 140 (11), pp. 3520-3530; disponibile su http://www.sciencedirect.com/science/article/pii/S0378375810002703;

[15] P. G. Bissiri (2010), Characterization of the law of a finite exchangeable sequence through the finite dimensional distributions of the empirical measure, *Statistics and Probability Letters*, vol. 80, (17-18), pp. 1306-1312; http://www.sciencedirect.com/science/article/pii/S0167715210001197;

[16] F. Bassetti, P.G. Bissiri (2008), Random Partition model and finitary Bayesian statistical inference, *Sankhyā*, vol. 70-A, Part 1, pp. 88-108 (ISSN: 0972-7671); http://www.jstor.org/stable/41234403;

[17] F. Bassetti, P.G. Bissiri (2007), Finitary Bayesian statistical inference through partitions tree distributions, *Sankhyā*, vol. 69, Part 4, pp. 808-841 (ISSN: 0972-7671); http://www.jstor.org/stable/25664591;

Submitted papers

[18] Porcu, E., Bissiri, P.G., Tagle, F. and Quintana F. (2019). Nonparametric Bayesian Modeling and Estimation of Spatial Covariance Functions for Global Data.

[19] Bissiri, P.G., Porcu, E., Tagle, F. and Quintana F. (2019). Nonparametric Bayesian Modeling of Covariance Functions on Spheres cross Time

[20] Bissiri, P.G., and Ongaro A. (2019), Nonparametric Bayesian inference for the Gini–Simpson index

Conference proceedings

[21] Bissiri, P.G. and Chiogna, M. and Nguyen Thi Kim Hue (2020), Bayesian Inference of Undirected Graphical Models from Count Data, in *Book of short papers SIS 2020* (eds: A. Pollice, N. Salvati, F. Schirripa Spagnolo), pp. 638–643, https://it.pearson.com/content/dam/region-core/italy/pearson-italy/pdf/Docenti/Universit%C3%A0/Pearson-SIS-2020-atti-conv

pdf

International conference abstracts

[22] P.G. Bissiri, A. Ongaro and S.G. Walker (2012), Species sampling models: Consistency for the number of species in *Fifth International Conference of the ERCIM (European Research Consortium for Informatics and Mathematics) Working Group on Computing & Statistics (ERCIM 2012), book of abstracts*, page 32, Oviedo, Spain, ISBN: 978-84-937822-2-1.

PhD thesis

[23] P. G. Bissiri, Statistical issues connected with finitary exchangeable sequences, PhD thesis, Department of Mathematics, University of Pavia, Italy, 2007.

Google Scholar https://scholar.google.com/citations?user=1tqA6kYAAAAJ&hl=en&oi=ao