# CURRICULUM VITAE

## Stefano Maria Iacus

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### Personal

Born on 27-June-1968 in Rome, Italy; Citizen of Italy; three children: Ludo, Lucy and Maite.

### Current position

Full professor in "Statistics", University of Milan, Italy. Currently at the Department of Economics, Management and Quantitative Methods, Faculty of Political, Economic and Social Sciences, University of Milan, Italy.

### Current and former appointments

Proposer of the master degree programme (Laura Magistrale) on "Data Science & Economics", University of Milan, 2018.

Director of the master degree programme (Laura Magistrale) on "Finance & Economics", University of Milan, 2014-2018. `http://www.mef.unimi.it`

Director of the master programme (master di II livello) on "Data Science for Economics, Business and Finance", University of Milan, 2018-present. `http://www.datasciencelab.unimi.it`

Member of the "Big Data Committee" ISTAT (Istituto Nazionale di Statistica), 2016–2020;

CEO/CTO and Co-founder of the spin-off company of the University of Milan named *Voices from the Blogs S.r.l.* for advanced text mining and analysis of social media content, 12/12/12-present.

Founder of AlgoFinance Sagl, in Lugano (Switzerland), a startup company, born on 15/5/2017, which develops algorithms for financial trading.

Member of the SMaPP Global Network, New York University (`https://wp.nyu.edu/smappglobal`), 2015 – 2018;

Member of the R Foundation for Statistical Computing since 2002.

Member of the R Core Team, the international group of developers of the **R** statistical environment, 1999-2014 (`http://www.R-Project.org`)

*Research Full Processor* at the Graduate School of Mathematical Science, University of Tokyo, Japan, period: 1st-April-2-14, 30th-September-2014.

Associate editor of *Japanese Journal of Statistics and Data Science*, 2017 – present.

Associate editor of the *Journal of Statistical Software* for the years 2004-2006 and 2011 – present.

Associate editor of *Journal of Statistical Planning and Inference*, 2012 – present.

Editorial Board of the *International Journal of Applied Nonlinear Science*, 2012 – present.

Guest editor:

- Special Issue on "Election Forecasting Techniques", *Italian Journal of Applied Statistics*, 2014;
- Special Issue on "Increasing Innovation Opportunities by Unlocking the value of BIG DATA", *Electronic Journal of Applied Statistical Analysis: Decision Support Systems and Services Evaluation*, 2014.

Director of the master degree program (Laura Magistrale) on "Economia e Finanza Internazionale", University of Milan, 2013 - 2015.

Associate professor in "Probability and Mathematical Statistics", University of Milan, Italy, period: 2003-2015;

IMS Group Editor for the *Institute of Statistical Mathematics* (2006-2009).

Data Base Manager for the *Current Index to Statistics* of ASA (American Statistical Association) and IMS (Institute of Mathematical Statistics) for the term 2007-2009.

President of the Informatics Committee and director of the computational laboratories at the Faculty of Political Sciences, Milan, 2008 – 2015.

Coordinator of Computational Finance unit at the research center AdDAMS (Advanced Applied Mathematical and Statistical Sciences), 2008-2014.

Board member of the Scientific Committee of CTU (Center for E-Learning and Multimedia Production, University of Milan).

Former managing Editor of the UNIMI Research Papers in Economics, Business and Statistics, The Berkeley Electronic Press.

## Visting periods

Visiting full professor at the Graduate School of Mathematics, University of Tokyo, Japan. (28-Dec-2016 to 31-Jan-2017).

Visiting full professor at the Graduate School of Mathematics, University of Tokyo, Japan. (22-Jan-2016 to 01-Mar-2016).

Research full professor at the Graduate School of Mathematics, University of Tokyo, Japan. (1-Apr-2014 to 30-Sep-2014).

Visiting associate professor at the Graduate School of Mathematics, University of Tokyo, Japan. (15-Jul-2012 to 28-Jul-2012).

Visiting associate professor at the Graduate School of Mathematics, University of Tokyo, Japan. (30-Aug-2011 to 1-Oct-2011).

Visiting associate professor at the Graduate School of Mathematics, University of Tokyo, Japan. (1-Nov-2010 to 8-Jan-2011).

Visiting professor, Laboratoire de Statistique et Processus, Université du Maine, Le Mans, France. (27-Sep-2010 to 6-Oct-2010).

Visiting professor, Department of Mathematics, University of Copenhagen, Denmark. (22-Sep-2010 to 24-Sep-2010).

Visiting professor, at Fraunhofer ITWM (Institut für Techno- und Wirtschaftsmathematik), Kaiserslautern, Germany. (14-Sep-2010 to 19-Sep-2010).

Visiting associate professor at the Graduate School of Mathematics, University of Tokyo, Japan. (31-Nov-2008 to 1-Jan-2009).

Visiting associate professor at the Graduate School of Mathematics, University of Tokyo, Japan. (1-Dec-2007 to 30-Dec-2007).

Visiting associate professor at the Institute of Statistical Mathematics, Tokyo (4-Sep-2006 to 2-Nov-2006).

Visiting associate professor at the Graduate School of Mathematics, University of Tokyo, Japan. (5-Nov-2006 to 3-Jan-2007).

## Education

**Doctorat en Mathématiques, Option Statistiques (Dec 1999)**
Université du Maine, Francia (grade *"tres honorable"*), supervisor Youry Kutoyants.

**PhD in Statistics (Dec 1998)**
University of Padua, Italy, supervisor Alessandra Salvan.

**Visiting student Aathus University, Denmark (Apr-Sep 1998)**
supervisor Ole Barndorff-Nielsen, Socrates fellowship

**Visiting student, Univerisité du Maine, Le Mans, France (Nov '96 - March 2000)**
for non-consecutive 12 months at Laboratoire de Statistiques et Processus, Université du Maine.

**Degree in Statistics (July 1995)**
Diploma in Statistical Sciences, *magna cum laude* ("110/110 e lode"), supervisor of degree thesis Enzo Orsingher.

## Professional Societies

Elected Member of the International Statistical Institute (ISI) and ordinary member of American Mathematical Society (AMS), Institute of Mathematical Statistics (IMS), International Association for Statistical Computing (IASC), Bernoully Society.

## Major research interests

*Statistics:* computational statistics; matching methods for causal inference; simulation techniques; sentiment analysis and text analytics; inference for stochastic processes;
*Probability:* diffusion processes; processes driven by hyperbolic equations; stochastic resonance; iterated functions systems (IFSs), mathematical finance;

## Other interests and activities

- I have been a member of the R-Core Team (1999-2014), international group of developers of the **R** statistical environment (`http://www.R-project.org`). I'm particular in charge of Mac OS X support for this system. The **R** software is used in academia as well as in industry by thousands of people around the world. I have also written several statistical packages for the **R** statistical environment.

- Since December 2000, I'm member of the board for the Graduate School of Statistics (Dottorato di Statistica) at University of Milan.

- I am a reviewer for the MathSci.net service of AMS and have served as referee for the following journals:

  - Statistics, Probability, Mathematics, Information Theory: Annals of Statistics, Journal of the Royal Statistical Society, Journal of Multivariate Analysis, Statistical Inference for Stochastic Processes, ESAIM: Probability and Statistics, Information Sciences, Statistics and Probability Letters, Applied Sciences, Applied Mathematics Letters, Bulletin of the Korean Mathematical Society, Metron, Symmetry, Stochastics, Journal of Statistical Software, Pattern Recognition Letters, Indian Journal of Mathematics, Statistical Methods and Applications, Journal of Statistical Computation and Simulation, International Journal of Image Processing, Mathematical & Computer Modelling;
  - Finance, Biology, Political Science and other fields: Journal of Computational Finance, Computational Economics, BioMedical Statistics and Clinical Epidemiology, American Journal of Political Science, Comparative Political Studies, Canadian journal of Forest Research;

- Since May 2003, I organize yearly an international school called "Computational and statistical aspects of microarray data analysis" (`http://www.huber.embl.de/csama/`), co-sponsorized by many international societies including ISI/IASC, SIS (Italian Statistical Society), SISMEC (Italian Society of Epidemiology and Medical Statistics), IBS (Italian Biometric Society). This course has attendants from everywhere in the world (Europe, Asia and Americas). This is related to my activity in the Bioconductor Project for statistical microarray analysis (`http://www.Bioconductor.org`). Faculty of the course include

lecturers from EBML, EBI, Harvard University and many other international top research centers.

- Along with other researchers in economics and political science, I'm currently running a project for blog sentiment analysis called *Voices from the Blogs* (the web site is available at `http://www.voices-int.com`). This project, VfB in short, is intended to monitor the opinion of the italian bloggers and social media on actuality and hot topics for the italian society. For this project I've developed text analytics tools as well as a crawler for public data and the engine for automated statistical analysis.

- Co-founder, on date 12/12/12, of the spin-off company of the University of Milan named *Voices from the Blogs S.r.l.* (after the same project above) which offers innovative services for monitoring and analyzing public opinions using advanced text mining and sentiment analysis solutions.

- Since November 2009 I'm the board of evaluators of scientific project funding of the Swiss National Science Foundation (SNSF) for the topic "Finance".

- I have been in charge of running the PAS (Probability Abstract Service) and also been Associate Web Editor for Institute of Mathematical Statistics (`http://www.imstat.org`) Web site.

- I've been advisor of several master degree students in Mathematical Finance, and co-advisor of a PhD candidate in statistics who worked on inference for random flights. I've been advisor of a Post-doc thesis on inference and simulation of CO-GARCH processes.

- I'm currently involved in an international project called **Yuima**, founded by the Japan Science Technology agency. This project (`http://www.yuima-project.com`) is about computational aspects of simulation and inference for stochastic processes, where the mainstream applications are (but not limited) to Finance. It is intended to provide a bridge from mathematical theory to ready-to-use tools. Along with Nakahiro Yoshida (Tokyo University) I serve as coordinator for this project which involves researchers from both Japan and Europe.

- In 2011 I've received a bi-annual grant on computational statistics for 166.000 Euros from the Italian Ministry of Education and Research (MIUR) to develop both the statistical theory and the computational implementation of simulation and inference for CO-GARCH models. This grant was also used to fund a PostDoc position at the University of Milan.

# Academic Tutoring

i) Supervised PhD students:

   – Alessandro De Gregorio, PhD in Statistics, University of Padua

ii) Supervised PostDocs:

   – Lorenzo Mercuri (Post Doc bourse funded PRIN2012, period 2013); now associate professor (ricercatore) MAT06 since December 2013 @ UNIMI.

– Enrico Bibbona (Post Doc bourse PRIN2012, period 2012-2013); now associate professor (ricercatore) MAT06 since September 2012 @ UNITO.

# Publications

I've published books and papers both on my main stream of research as well as on other fields like biology and the social sciences. I like interdisciplinary collaborations.

## Books & Book Chapters

1. Iacus, S.M., Yoshida, N. (2018) *Simulation and Inference for Stochastic Processes with YUIMA*, Springer, New York.

2. Ceron, A., Curini, L., Iacus, S.M. (2017) *Politics and Big Data: Nowcasting and Forecasting Elections with Social Media*, Routledge, New York.

3. Ceron, A., Curini, L. Iacus, S.M. (2015) Social Media and Elections, in *Arzheimer, K., Evans, J. and Lewis-Beck, M. eds., The Handbook of Electoral Behaviour*, Sage, *forthcoming*.

4. Ceron, A., Curini, L., Iacus, S.M. (2013) *Social Media e Sentiment Analysis: L'evoluzione dei fenomeni sociali attraverso la Rete*, Sxl - Springer for Innovation, Springer, ISBN: 978-88-470-5531-5 (in italian).

5. Iacus, S.M. (2013) An introduction to R, Book Chapter in *Modern Industrial Statistics: with applications in R, MINITAB and JMP, 2nd Edition*, Kennett, R., Zacks, S., Amberti, D. eds, John Wiley & Sons, Ltd., Chichester, ISBN: 978-1-118-45606-4.

6. Ceron, A., Curini, L., Iacus, S.M., Mattioni, R., Porro, G. (2012) *#Milano-Brianza in un tweet: lavoro, politica, partecipazione*, Guerini e Associati, Milan, ISBN: 8862504594 (in italian).

7. Iacus, S.M. (2012) An introduction to R, Book Chapter in *Modern Analysis of Customer Surveys: with applications using R*, Kennett, R.S., Salini, S. eds, John Wiley & Sons, Ltd., Chichester, pages 457–497, ISBN: 978-0-470-97128-4.

8. Iacus, S.M. (2011) *Option Pricing and Estimation of Financial Models with R*, John Wiley & Sons, Ltd., Chichester, 472 page, ISBN: 978-0-470-74584-7

9. Iacus, S.M. (2008) *Simulation and Inference for Stochastic Differential Equations: with R examples*, Springer Series in Statistics, Springer NY, 300 pages, ISBN: 978-0-387-75838-1.

10. Iacus, S.M., Masarotto, G. (2007) *Laboratorio di statistica con R*, seconda edizione, McGraw-Hill Companies Italia, 396 pages, ISBN: 978-8-838-66369-7. (in italian, book on computational statistics)

11. Iacus, S.M. (2006) *Statistica*, McGraw-Hill Companies Italia, 252 pages, ISBN: 978-8-838-66315-4. (in italian, didactic publication)

12. Iacus, S.M. , La Torre, D., Porro, G. (2001) *Elementi di matematica per l'economia e la statistica*, 153pp, CUSL, Milano, ISBN 88-8132-113-0. (in italian, didactic publication)

## Recent work under review

13. Ceron, A., Curini, L., Iacus, S.M. (2018) ISIS at its apogee: the Arabic discourse on Twitter and what we can learn from that about ISIS support and Foreign Fighters. *ArXiv*, https://arxiv.org/abs/1804.04059.

14. Curti, M., Iacus, S.M., Porro, G., Siletti, E. (2015) Measuring Social Well Being in The Big Data Era: Asking or Listening?, *ArXiv*, http://arxiv.org/abs/1512.07271.

15. Iacus, S.M., Porro, G., Salini, S., Siletti, E. (2015) Social networks, happiness and health: from sentiment analysis to a multidimensional indicator of subjective well-being, *ArXiv*, http://arxiv.org/abs/1512.01569.

## Selected papers

16. De Gregorio, A., Iacus, S.M. (2018) On penalized estimation for dynamical systems with small noise. Accepted for publication on *Electronic Journal of Statistics.* Available at https://arxiv.org/abs/0912.5078.

17. Iacus, S.M., Mercuri, L., Roji, E. (2018) Discrete time approximation of a COGARCH($p$,$q$) model and its estimation. Accepted for publication on *Journal of Time Series Analysis. ArXiv*, http://arxiv.org/abs/1511.00253.

18. Iacus, S.M., G. King, G. Porro (2108) A Theory of Statistical Inference for Matching Methods in Applied Causal Research. Accepted for publication on *Political Analysis*. Available at http://gking.harvard.edu/publications/how-coarsening-simplifies-matchin

19. De Gregorio, A., Iacus, S.M., (2018) Empirical $L^2$-distance test statistics for ergodic diffusions, *Statistical Inference for Stochastic Processes*, **xx**(y), DOI https://doi.org/10.1007/s11203-018-9176-x.

20. Iacus, S.M., Mercuri, L., Roji, E. (2017) COGARCH($p$,$q$): Simulation and Inference with yuima Package, *Journal of Statistical Software*, **80**(4), DOI http://dx.doi.org/10.18637/jss.v080.i04.

21. Curini, L., Iacus, S.M. (2016) Nash Optimal Party Positions: The nopp R Package, forthcoming *Journal of Statistical Software*.

22. Ceron, A., Curini, L., Iacus, S.M. (2016) iSA: A fast, scalable and accurate algorithm for sentiment analysis of social media content, *Information Sciences*, **367-368**, 105–124. DOI http://dx.doi.org/10.1016/j.ins.2016.05.052.

23. Ceron, A., Curini, L., Iacus, S.M. (2016) First and Second Level Agenda-Setting in the Twitter-Sphere. an Application to the Italian Political Debate, *Journal of Information Technology & Politics*, **13**(2), 159-174. DOI http://dx.doi.org/10.1080/19331681.2016.1160266.

24. Ceron, A., Curini, L., Iacus, S.M. (2015) Using social media to forecast electoral results: A Review of the the state of the art, *Italian Journal of Applied Statistics*. **25**(3), 239–261. http://sa-ijas.stat.unipd.it/sites/sa-ijas.stat.unipd.it/files/3.pdf.

25. Ceron, A., Curini, L., Iacus, S.M., (2015) Using Sentiment Analysis to Monitor Electoral Campaigns: Method Matters–Evidence From the United States and Italy, *Social Science Computer Review*, **33**(1), 3–20. DOI http://dx.doi.org/10.1177/0894439314521983.

26. Iacus, S.M., Mercuri, L. (2015) Implementation of Lévy CARMA model in Yuima package, *Computational Statistics*, 1-31, DOI http://dx.doi.org/10.1007/s00180-015-0569-7.

27. Iacus, S.M. (2014) Big Data or Big Fail? The Good, the Bad and the Ugly and the missing role of Statistics, *Electronic Journal of Applied Statistical Analysis: Decision Support Systems and Services Evaluation*, **5**(1), 4-11, DOI http://dx.doi.org/10.1285/i2037-3627v5n1p4.

28. Canova, L., Curini, L. Iacus, S.M. (2014) Measuring idiosyncratic happiness through the analysis of Twitter: an application to the Italian case, *Social Indicators Research*, May 2014, 1-16, DOI http://dx.doi.org/10.1007/s11205-014-0646-2.

29. Brouste, A., Fukasawa, M., Hino, H., Iacus, S.M., Kamatani, K., Koike, Y., Nomura, R., Shimizu, Y., Uchida, M., Yoshida, N. (2014) The YUIMA Project: a Computational Framework for Simulation and Inference of Stochastic Differential Equations, *Journal of Statistical Software*, **57**(4), 1–51.

30. Iacus, S.M., Porro, G. (2014) Does European Monetary Union make inflation dynamics more uniform?, *Applied Economics Letters*, **21**(6), 391–396. DOI http://dx.doi.org/10.1080/13504851.2013.848018.

31. Ceron, A., Curini, L., Iacus, S.M., Porro, G. (2013) Every tweet counts? How sentiment analysis of social media can improve our knowledge of citizens political preferences with an application to Italy and France, *New Media & Society*, **16**(2), 340–358. DOI http://dx.doi.org/10.1177/1461444813480466.

32. Iacus, S.M., Porro, G. (2013) EU regional unemployment as a transnational matter: An analysis via the Gompertz diffusion process, *Papers in Regional Science*, in print. DOI http://dx.doi.org/10.1111/pirs.12091.

33. De Gregorio, A., Iacus, S.M. (2013) On a family of test statistics for discretely observed diffusion processes, *Journal of Multivariate Analysis*, **122**, 292–316. DOI http://dx.doi.org/10.1016/j.jmva.2013.08.002.

34. Brouste, A., Iacus, S.M. (2012) Parameter estimation for the discretely observed fractional Ornstein-Uhlenbeck process and the Yuima R package, *Computational Statistics*, **28**, 1529–1547. DOI http://dx.doi.org/10.1007/s00180-012-0365-6.

35. Iacus, S.M., Yoshida, N. (2012) Estimation for the change point of the volatility in a stochastic differential equation, *Stochastic Processes and Their Applications*, **122**, 1068–1092. DOI http://dx.doi.org/10.1016/j.spa.2011.11.005.

36. Iacus, S.M., King, G., Porro, G. (2012) Causal Inference Without Balance Checking: Coarsened Exact Matching, *Journal of Political Analysis*, **20**(1), 1–24, DOI http://dx.doi.org/10.1093/pan/mpr013

37. De Gregorio, A., Iacus, S.M. (2012) Adaptive LASSO-type estimation for ergodic diffusion processes, *Econometric Theory*, **28**, 1–23. DOI http://dx.doi.org/10.1017/S0266466611000806.

38. Iacus, S.M., King, G., Porro, G. (2011) Multivariate Matching Methods That are Monotonic Imbalance Bounding, *Journal of American Statistical Association*, **106**(493), 345–361,

    DOI http://dx.doi.org/10.1198/jasa.2011.tm09599

39. De Gregorio, A., Iacus, S.M. (2011) Least-squares change-point estimation for the telegraph process observed at discrete times, *Statistics*, **45**(4), 349–359,

    DOI http://dx.doi.org/10.1080/02331881003769022/

40. Ballarino, G., Checchi, D., Fiorio, C., Iacus, S.M., Leonardi, M., Porro, G. (2011) La valutazione dellefficacia del "sistema delle doti" della Regione Lombardia: modelli statistici e criticità nella progettazione, Rassegna Italiana di Valutazione, **15**, 39–61, DOI http://dx.doi.org/10.3280/RIV2011-049004. (in italian)

41. Iacus, S.M., Yoshida, N. (2010) Numerical analysis of volatility change point estimators for discretely sampled stochastic differential equations, *Economic Notes*, **39**(1/2), 107–127.

42. De Gregorio, A., Iacus, S.M. (2010) Divergences Test Statistics for Discretely Observed Diffusion Processes, *Journal of Statistical Planning and Inference*, **140**, 1744-1753. DOI https://doi.org/10.1016/j.jspi.2009.12.029

43. De Gregorio, A., Iacus, S.M. (2010) Clustering of discretely observed diffusion processes, *Computational Statistics & Data Analysis*, **54**, 598–606.

44. De Gregorio, A., Iacus, S.M. (2009) On Rényi information for ergodic diffusion processes, *Information Sciences*, **179**(3), 279–291.

45. Iacus, S.M., Uchida, M., Yoshida, N. (2009) Parametric estimation for partially hidden diffusion processes sampled at discrete times, *Stochastic Processes and Their Applications*, **119**, 1580–1600.

46. Blackwell, M., Iacus, S.M., King, G., Porro, G. (2009) cem: Coarsened exact matching in Stata, *The Stata Journal*, **9**(4), 524-546.

47. Iacus, S.M., Porro, G. (2009) Teachers' evaluations and students' achievement: a 'deviation form the reference' analysis, *Education Economics*, 1-21

48. Iacus, S.M., King, G., Porro, G. (2009) cem: Software for Coarsened Exact Matching, *Journal of Statistical Software*, **30**(9), 1–27.

49. Iacus, S.M., Porro, G. (2009) Random Recursive Partitioning: a matching method for the estimation of the average treatment effect, *Journal of Applied Econometrics*, **24**, 163–185.

50. De Gregorio, A., Iacus, S.M. (2008) Least squares volatility change point estimation for partially observed diffusion processes, *Communications in Statistics, Theory and Methods*, **37**(15), 2342–2357.

51. Iacus, S.M., Yoshida, N. (2008) Estimation for the discretely observed telegraph process, *Theory of Probability and Mathematical Statistics*, **78**, 33–43.

52. De Gregorio, A., Iacus, S.M. (2008) Parametric estimation for the standard and geometric telegraph process observed at discrete times, *Statistical Inference for Stochastic Processes*, **11**, 249–263.

53. Iacus, S.M., Porro, G. (2008) Invariant and Metric Free Proximities for Data Matching: An R Package, *Journal of Statistical Software*, **25**(11), 1–22.

54. Iacus, S.M., Porro, G. (2007) Missing data imputation, matching and other applications of random recursive partitioning, *Computational Statistics and Data Analysis*, **52**, 2, 773–789.

55. Iacus, S.M., La Torre, D. (2006) IFSM representation of Brownian motion with applications to simulation, in *Math Everywhere. Deterministic and Stochastic Modelling in Biomedicine, Economics and Industry, Dedicated to the 60th Birthday of Vincenzo Capasso*, Aletti G., Burger M., Micheletti A., Morale D. (Eds.) , Springer, NY, 115–124.

56. Iacus, S.M., La Torre, D. (2005) A comparative simulation study on the IFS distribution function estimator, *Nonlinear Analysis - Real World Applications*, **6**(5), 858–873.

57. Iacus, S.M., La Torre, D. (2005) Approximating distribution functions by iterated function systems, *Journal of Applied Mathematics and Decision Sciences*, **9**(1), 33–46.

58. Iacus, S.M., Porro, G. (2005) Il lavoro interinale in Italia. Analisi di un caso per riflettere sulle caratteristiche dell'offerta e sul comportamento degli operatori, *Rivista di Politica Economica*, 123–215 (in italian).

59. Iacus, S.M., La Torre, D. (2004) IFS approximations of distribution functions and related optimization problems, *Applied Sciences*, **6**(1), 27–38.

60. Gentleman, R., Carey, V., Bates, D., Bolstad, B., Dettling, M., Dudoit, S., Ellis, B., Gautier, L., Ge, Y., Gentry, J. Hornik, K., Hothorn, T., Huber, W., Iacus, S.M., Irizarry, R., Leisch, F., Li, C., Maechler, M., Rossini, A., Sawitzki, G., Smith, C., Smyth, G., Tierney, L., Yang, J. and Zhang, J. (2004) Bioconductor: open software development for computational biology and bioinformatics, *Genome Biology*, **5**(10), R80.

61. Iacus, S.M., Porro, G., Vezzulli, A. (2004) Temporary Agency Workers in Italy: Alternative Techniques of Classification, *Labour*, **18**(4), 699–725.

62. Iacus, S.M., Negri, I. (2003) Estimating unobservable signal with Markovian noise induction, *Statistical Methods and Applications*, **12**(2), 153–167.

63. Iacus, S.M., La Torre, D. (2003) Fixed point theory with an application to statistics, in *Giornate Scientifiche in ricordo di Antonio C. Capelo*, Cleup Editrice, Padova, pp 1–15.

64. Iacus, S.M., La Torre, D. (2003) Nonparametric estimation by iterated function systems and optimization problems, in *Recent advances in optimization (Varese, 2002)*, 101–118, Datanova, Milan.

65. Iacus, S.M. (2002) Statistical analysis of stochastic resonance with ergodic diffusion noise, *Stochastics & Stochastics Reports*, **73**(3-4), 271–285.

66. Iacus, S.M. (2001) Statistic analysis of the inhomogeneous telegrapher's process, *Statistics and Probability Letters*, **55**(1), 83–88.

67. Iacus, S.M., Kutoyants, Y. (2001) Semiparametric hypotheses testing for dynamical systems with small noise, *Mathematical Methods of Statistics*, **10**(1), 105–120.

68. Iacus, S.M. (2001) Efficient estimation of dynamical systems, *Studies in Nonlinear Dynamics and Econometrics*, **4**(4), 213–226.

69. Iacus, S.M. (2000) Semiparametric estimation of a functional of the drift coefficient for a non-homogeneous dynamical system with small noise, *Journal of Non-parametric Statistics*, **13**, 129–151.

70. Iacus, S.M. (2000) Semiparametric estimation of the state of a dynamical system with small noise, *Statistical Inference for Stochastic Processes*, **3**(3), 277-288.

71. Iacus, S.M. (1997) Semiparametric estimation of a functional of the drift coefficient of a dynamical system with small noise, *Journal of the Italian Statistical Society*, **6**(2), 161–176.

## Book reviews

72. Iacus, S.M. (2015) Automated Data Collection with R - A Practical Guide to Web Scraping and Text Mining, *Journal of Statistical Software*, **68**(1), 1–3.

## Technical reports

73. Curini, L., Iacus, S.M. (2008) Analyzing party-system dynamics through spatial theory: Italy between 2006 and 2008, presented at *Società Italiana di Scienza Politica, XXII Convegno Annuale*, Pavia, 4-6 settembre 2008.

74. Iacus, S.M., Negri, I. (2008) Analisi di secondo livello del questionario E-Learning CTU, Università degli Studi di Milano. Available at `http://ctu.unimi.it`

75. Checchi, D., Iacus, S.M., Negri, I., Porro, G. (2004) Formazione e percorsi lavorativi dei laureati dellUniversità degli Studi di Milano (II$^o$ edizione: laureati 1999) [Human capital formation and professional paths of degree students at Milan University], COSP, Università degli Studi di Milano. Available as Departmental Working Papers, n.04.2004-Aprile, `http://www.economia.unimi.it`

76. Iacus, S.M.. Porro, G. (2001) Occupazione interinale e terzo settore: analisi dei microdati di una società no profit di fornitura di lavoro interinale [Temporary work and non-profit: analysis of microdata from a non-profit TWA], *IRES Quaderno n.2*, IRES-Lombardia, july 2001.

77. Iacus, S.M. (2000) Note introduttive sul linguaggio R, n. 28/R, giugno 2000, *Dipartimento di Matematica F. Brioschi*, Politecnico di Milano.

78. Iacus, S.M. (1998) The van Trees Inequality for diffusion processes with small diffusion coefficient and asymptotic efficiency in a semiparametric problem, *Department of Theoretical Statistics, University of Aarhus*, research reports No. 397, June 1998.

## Peer reviewed conference proceedings

79. Iacus, S.M. (2009) The Yuima Project: a computational framework for simulation and inference of SDEs with jumps, *Third International Conference on Computational and Financial Econometrics (CFE 09)*, Cyprus, October 29-31, 2009.

80. Iacus, S.M., G.King, G. Porro (2009) Coarsened exact matching, *7$^o$ Meeting of the Classification and Data Analysis Group of the Italian Statistical Society*, Catania, 9-11 Settembre, 2009.

81. Iacus, S.M. (2007) SDE: an R package for simulation and inference of stochastic differential equations, *International Workshop on Computational and Financial Econometrics*, University of Geneva, Switzerland, April 20-22, 2007.

82. Iacus, S.M., La Torre, D. (2006) Iterated function system and simulation of Brownian motion, *useR! , The R User Conference*, Wirtschaftsuniversität Wien in Vienna, Austria,15-17/06/2006.

83. Iacus, S.M., Ligges, U., Urbanek, S. (2006) R on Different Platforms: The useRs' Point of View, *useR! , The R User Conference*, Wirtschaftsuniversität Wien in Vienna, Austria,15-17/06/2006.

84. Iacus, S.M., Porro, G. (2006) Matching and ATT Estimation via Random Recursive Partitioning, *useR! , The R User Conference*, Wirtschaftsuniversität Wien in Vienna, Austria,15-17/06/2006.

85. Iacus, S.M., La Torre, D. (2003) Fractals and Statistics: An R Package Called ifs, in *Proceedings of the 3rd International Workshop on Distributed Statistical Computing (DSC 2003) March 2022, Vienna, Austria ISSN 1609-395X, Hornik, K., Leisch, F. & Zeileis, A. (eds.)*. `http://www.ci.tuwien.ac.at/Conferences/DSC-2003/`

86. Iacus, S.M. (2001) R porting for the Macintosh, in *Proceedings of the 2nd International Workshop on Distributed Statistical Computing (DSC 2001) March 1517, Vienna, Austria ISSN 1609-395X, Hornik, K., Leisch, F. (eds.)*. `http://www.ci.tuwien.ac.at/Conferences/DSC-2001/`

87. Iacus, S.M. (1998) Semiparametric estimation of a functional of the drift coefficient for a small diffusion process, *Proceedings of Prague stochastics '98, 6th Prague Symposium on Asymptotics Statistics*, Vol **1**, 243-246, Prague.

88. Iacus, S.M. (1998) Metodi di Stima Non Parametrici per Processi Stocastici, *Atti della XX-XIX Riunione Scientifica della Società Italiana di Statistica*, Sorrento.

89. Iacus, S.M. (1995) Planar random motion with finite velocity governed by a fourth-order hyperbolic equation, *Acts of Ninth European Young Statisticians Meeting*, Bernoully Society, Erasmus University, Rotterdam, 44-49.

90. Iacus, S.M. (1993) AMIGACensus'93, *AMIGA Users Group Savona*, Vol. 2, N. 2, pp 50-57.

# Patents

91. Iacus, S.M., Ceron, A., Curini, L. (2015) iSA: A FAST, SCALABLE AND ACCURATE ALGORITHM FOR SENTIMENT ANALYSIS OF SOCIAL MEDIA CONTENT. U.S. provisional application No. 62/215264, Sept. 8th, 2015.

# Software packages

92. Iacus, S.M. *et al.* : THE R STATISTICAL ENVIRONMENT. Available at: `http://www.R-Project.org`

93. Iacus, S.M. *et al.* : YUIMA: THE PROJECT FOR SIMULATION AND INFERENCE OF MULTIDIMENSIONAL STOCHASTIC DIFFERENTIAL EQUATIONS. Available at: `http://R-Forge.R-Project.org/projects/yuima/`

94. Iacus, S.M. : SDE: SIMULATION AND INFERENCE FOR STOCHASTIC DIFFERENTIAL EQUATIONS. R package version 2.0.10. Available at: `http://CRAN.R-project.org/package=sde`

95. Iacus, S.M., King, G., Porro, G. : CEM: SOFTWARE FOR COARSENED EXACT MATCHING. R package version 1.1.4. Available at: `http://gking.harvard.edu/cem`

96. Iacus, S.M. : RRP: RANDOM RECURSIVE PARTITIONING. R package version 2.91. Available at: `http://cran.r-project.org/src/contrib/Archive/rrp/`

97. Iacus, S.M., Masarotto, G. : LABSTATR: LIBRERIA DEL LABORATORIO DI STATISTICA CON R. R package version 1.0.7. Available at: `http://CRAN.R-project.org/package=labstatR`

98. Iacus, S.M. : OPEFIMOR: OPTION PRICING AND ESTIMATION OF FINANCIAL MODELS IN R. R package version 1.0. Available at: `http://CRAN.R-project.org/package=opefimor`

99. Blackwell, M., Iacus, S.M., King, G., Porro, G. : CEM: STATA MODULE TO PERFORM COARSENED EXACT MATCHING. Available at: `http://ideas.repec.org/c/boc/bocode/s457127.html#download`

100. Blackwell, M., Iacus, S.M., King, G., Porro, G. : CEM FOR SPSS: COARSENED EXACT MATCHING FOR SPSS. Available at: `http://projects.iq.harvard.edu/cem-spss/home`

## In preparation

Iacus, S.M., King, G., Porro, G. (2017) *Causal inference in observational studies via Coarsened Exact Matching*, Chapman&Hall, UK.

Iacus, S.M. Second Edition of: *Simulation and Inference for Stochastic Differential Equations: with R examples*, Springer Series in Statistics, Springer NY.

### Translations into italian language

Iacus, S.M. (2002) "Elements of Statistics II: Inferential Statistics", S. & R. Bernstein, McGraw-Hill Libri Italia.

Iacus, S.M. (2002) "Beginning Statistics", Diamond & Jefferies, McGraw-Hill Libri Italia.

Iacus, S.M. (2000) "Probability & Statistics", Second Edition, M. Spiegel, 380pp, McGraw-Hill Libri Italia.

## Grants, Projects and Awards

#### Awards

2014 Big Data Contest Award "Produrre Statistica Ufficiale con i Big Data", jointly organized by ISTAT and Google, Rome, Italy.

2008 Distinguished Visiting Fellow Award from the Institute for Quantitative Social Science at Harvard University, Boston, USA.

2000 Awarded for *Valuable research report of "CNR fellowship for abroad specialization"*, CNR [National Research Council], Italy.

#### Funded Projects & Research Grants

2014 Japan Science Technology Agency (JST) Crest Program: "Modelling Methods allied with Modern Mathematics". Start date: October 2014; duration 5.5 years; total fund 160Millions of Yen (1.1 Millions of Euro). The Group of the University of Tokyo to which I belong as co-PI, has 1/7 of the total fund and is aimed at mixing the theory of statistics for stochastic processes with the analysis of Social Media and big data.

2011 Statistical and Computational Methods of Model Selection for Stochastic Differential Equations (P.I.), Italian Ministry of Education and Research - PRIN 2009 [166.000 Euros for 2 years]

2009 Sperimentazione Valutatore Indipendente, Regione Lombardia, Direzione Formazione e Lavoro. With Checchi, D. (P.I.), *et al.* [68.000 Euros per year, 2 years]

2008-2013 The Yuima Project. Funded by the Japan Science Technology (JST) Basic Research Programs PRESTO, Grants-in-Aid for Scientific Research No. 19340021, and the Global COE program "The research and training center for new development in mathematics" of Graduate School of Mathematical Sciences, University of Tokyo. [30 Millions Japanese Yen per year]

2007 Risultati scolastici, percezioni delle competenze e decisioni di investimento in capitale umano, Progetto finalizzato Invalsi "Finvali 2005", in collaborazione con IReR e IRRE Lombardia. With Checchi, D. (P.I.) and Porro, G. [50.000 Euros, 2 years]

2007 Qualità della formazione scolastica e apprendimento: effetti di breve e di medio periodo, nell'ambito del Progetto di ricerca sul capitale umano, IReR Lombardia. With Checchi, D. (P.I.), Porro, G. [15.000 Euros, 1 year]

2006 Progetto "BladeR", Fondo Grandi Attrezzature, University of Milan, Iacus, S. M. (P.I.) [250.000 Euros, 1 year]

2005 Financing public debt in the Stability and Growth Path era through government bonds: normative analysis, macroeconomic scenarios, bond risk-yield analysis, simulation methods and models of optimal issuances. MIUR grant F.I.R.B. RBNE03E3KF_004. With A. Missale (PI), E. Bacchiocchi. [150.000 Euros, 3 years]

**Other Grants and Fellowships**

2007 Stochastic differential equations driven by finite velocity processes. Probabilistic and statistical aspects and their applications to finance, University of Milan.

2006 JSPS Fellowship for Foreign Researchers, 2 months, subject of research "Inference for stochastic processes, computational statistics and numerical methods".

2004 Stochastic differential inclusions, University of Milan.

2003 Human capital and professional paths of degree students of Milan University, COSP grant, University of Milan.

2003 Research project: native implementation of Aqua GUI to R for MacOSX and low level system integration, R Statistical Foundation grant (6 months).

2002 Microdata analysis of non-profit temporary work agencies, IRES grant, Lumbardy.

2001 Statistical analysis of stochastic resonance, University of Milan grant (12 months).

2001 Statistical model selection: frequentist criteria based on likelihood and predictive densities, MURST [Ministry of University and Scientific Research] (6 moths).

2000 Data-ming techniques, University of Milan grant for young researchers (12 mesi).

2000 Asymptotic optimality of goodness-of-fit tests for dynamic and structural models, University of Milan grant (12 moths).

2000 Optimization techniques for Economy, Finance and Industry, CNR [National Research Council] project for young researchers (3 months).

1999 Minimax goodness-of-fit tests for non-parametric hypotheses, University of Milan grant (12 moths).

1998 Statistical models: probabilistic bases and procedures for statistical decisions, MURST grant (24 months).

1998 Fellowship for abroad study, University of Padua, (6 months).

1998 Socrates fellowship, University of Padua, (6 months).

1997 CNR fellowship for abroad specialization, grant n 203.10.36 (12 months).

1996 Research Project A 38, "Tipologie dei comuni italiani secondo indicatori agricoli e socio-economici", ISTAT [Natiional Statistic Institute] (3 months).

## Teaching Activities

**PhD level teaching**

- Computational Finance, University of Tokyo, Tokyo, Japan [30 hours, 2014]
- Computational Finance, University of Tunis, Tunis, Tunisie [15 hours, July 2013]
- Computational Statistics, University of Milan-Bicocca, Milan [20 hours, 2010/2011/2012]
- Mathematical Statistics, PhD Program in Economics, University of Milan [10 hours, oct 2011]
- Applied Statistics for Human Resource Management with R, Vodafone Italy, Milan, [12 hours, July 2011]
- PhD program of Economics & Social Science, University of Milan, Elementary Statistics [40 hours, February 2010]
- Statistical Inference for Diffusion Processes Observed at Discrete Time, PhD Program in Mathematical and Statistical Methods for Economics and Social Sciences, University of Perugia [9 hours, June 2008]
- Introductory stochastic calculus, PhD Program in Statistics, University of Milan [9 hours, January 2008]
- Course on the R statistical system, IReR Lombardia, Milano [20 hours, oct-nov 2007]
- R for Scientific Research, "Science Park", Trieste (`http://www.area.ts.it`) [32 hours, march 2006]
- Course on statistics and time-series analysis in R, Terna - Rete Elettrica Nazionale (`http://www.terna.it`) Rome, [24 hours, may-June 2006]
- Statistics, Graduate School of Political Sciences, Milan University [40 hours; graduate; 2003/2004, 2005/2006]
- Introduction to R, Graduate School in Statistics, University of Milan [15 hours; graduate; a.y. 2002/2003-2003/2004-2006/2007-2007/2008]
- Asymptotic efficiency of estimators, Graduate School in Statistics, University of Milan [20 hours; graduate; a.y. 2001-/2002-2002/2003]
- Asymptotic efficiency of goodness-of-fit tests, Graduate School in Statistics, University of Milan [20 hours; graduate; a.y. 2000/2001]

**Undergraduate and Master level teaching**

- Applied Statistics for Finance, Catholic University in Milan [48 hours; master; a.y. 2010/2011 till present]
- Elementary statistics, Faculty of Political Sciences, Milan University [40 hours; undegraduate; from a.y. 2001/2002 till present]
- Probability, Graduate School of Social Sciences, Milan University [20 hours; master; from a.y. 2007/2008 till a.y. 2012/2013]
- Mathematical Finance, Milan University [40 hours; master level; from a.y. 2004/2005 till present]
- Statistics, Business School on Economics and Finance, Bocconi University, Milan [56 hours; undergraduate; a.y. 2001/2002 till a.y. 2003/2004]
- Statistics in epidemiology, Milan University [20 hours; undergraduate, a.y. 2002/2003]
- Statistics, Milan University [72 hours; undegraduate; 2000/2001]
- Probability and Statistics, l'Istitut Supérieur des Materiaux du Mans (ISMANS), Le Mans (France) [14 hours; undegraduate; a.y. 1997/1998]
- Functional and Complex Analysis, l'Istitut Supérieur des Materiaux du Mans (ISMANS), Le Mans (France) [16 hours; undegraduate classes; a.y. 1997/1998]

**Invited lectures**

- MilanR $8^{th}$ Meeting, Milan, April 2017;
- Accenture – Finance & Insurance, Milan, March 2017;
- European Commission - Eurostat, Bruxelles, March 2017;
- University of Tor Vergata, Rome, February 2017;
- European Asylum Support Office, Bruxelles, December 2016;
- Higher Technical School of Engineering of Seville, Spain, December 2016;
- Université du Main - Le Mans, France, September 2016;
- The Chinese University of Hong Kong, Hong Kong, June 2016;
- New York University, Florence, IT, May 2016;
- Singapore University, Singapore, December 2015;
- New York University, New York, USA, October 2015;
- Festival della Statistica, Treviso, September 2015;
- University of Padua, Padua, Italy, March 2015;

- Freie Universität Bozen, Bozen, Italy, December 2014;
- IRVAPP, Research Institute for the Evaluation of Public Policies, Trento, Italy, November 2014;
- Forum PA, Bologna Fiere, Bologna, Italy, October 2014;
- University of Venezia, Ca' Foscari, Venice, Italy, October 2014;
- University of Taipei, Taipei, Taiwan, May 2014;
- Waseda University, Tokyo, Japan, May 2014;
- University of Roma III, Rome, Italy, February 2014;
- University of Paris 6, PAris, France, December 2013;
- University of Budapest, Budapest, Hungary, July 2013;
- Catholic University of Sacred Heart, Milan, Italy, May 2013;
- University of Milan Bicocca, Milan, Italy, May 2013;
- New York University in Florence, Florence, Italy, May 2013;
- Bocconi University, Milan, Italy, October 2013;
- Université du Maine, Le Mans, France, October 2013;
- University of Palermo, Palermo, Italy, July 2013;
- University of Padua, Padua, Italy, June 2013;
- University of Udine, Udine, Italy, June 2013;
- Bologna University, Bologna, Italy, February 2013;
- ISTAT, Rome, Italy, February 2013;
- Computer Laboratory, Cambridge University, UK, November 2012;
- University of Turin, Turin, Italy, April 2012;
- Princeton University, Princeton, USA, October 2011;
- University of Dublin, Dublin, Ireland, august 2011;
- University of Turin, Turin, Italy, May 2011;
- Graduate School of Mathematics, Tokyo University, Japan, December 2010;
- Laboratoire de Statistique et Processus, Université du Maine, Le Mans, France, September 2010;
- Department of Mathematics, University of Copenhagen, Denmark, September 2010;

- Faculty of Mathematics, Kyoto University, Japan, November 2010;
- Graduate School of Mathematics, Tokyo University, Japan, December 2009;
- CIMPA School 2010 "Applied Mathematics and Engineering", Balneario Solís, Uruguay, March 2010;
- RMI of the National University of Singapore, February 2010;
- Institute of Finance, University of Lugano, Switzerland, November 2009;
- Department of Statistical Science, Catholic University, Milano, November 2009;
- Department of Statistics and Mathematics, Vienna University of Economics and Business Administration, Austria, march 2009;
- Department of Statistics, University of Florence, Florence, February, 2009;
- Graduate School of Mathematics, Tokyo University, Japan, December 2008 and February 2009;
- Department of Economics, Universita' dell'Insubria, Varese, October 2008;
- Institute for Quantitative Social Science, Harvard University, USA, October, 2008;
- Department of Financial Economics and Statistics, University of Perugia, June 2008;
- Department of Decision Sciences, Bocconi University, Milan, February 2008;
- Research Institute for Computational Methods, Vienna University of Economics and Business Administration, Austria, January 2008;
- Graduate School of Mathematics, Tokyo University, Japan, December 2007;
- Department of Mathematics, McGill University, Canada, October 2006;
- Graduate School of Mathematics, Kyushu University, Fukuoka, Japan, October 2006;
- Institute of Statistical Mathematics, Tokyo, Japan, September 2006;
- Graduate School of Mathematics, Tokyo University, Japan, December 2006;
- Department of Economics and Statistics, University of Trieste, march 2006;
- Graduate School of Mathematics, Tokyo University, Japan, December 2005;
- Department of Computer Oriented Statistics and Data Analysis, Augsburg, Germany, march 2004;
- Department of Economics, University of Pavia, march 2003;
- Institute for Quantitative Methods, Bocconi University, march 2002;
- Department of Statistics and Mathematics, University of Wien, Austria, march 2001;

- Department of Statistics, University of Copenhagen, Denmark, May 1998;
- Department of Mathematics, University of Paderborn, Germany, April 1998;
- Department of Statistical Sciences, University of Padua, October 1997;
- Department of Statistics and Mathematics, Université de Rennes, France, October 1997;
- Department of Statistics, Erasmus University, Rotterdam, Neetherlands, august 1995.

## Hobbies

In the spare time I used to update the first (1995), and now historical, astronomical web site for amateur astronomers in Italy **Astro-link** `http://astrolink.mclink.it`. I can face operative systems (like Unix derivates including Mac OS X) and non-operative system (MS-Windows etc) as well.
I am also an amateur astronomer; I like to do sailing, boat fishing and trekking and, last but not least, cooking and eating good food. I am a very good pizza maker.