

**Academic
Curriculum Vitae
Simone Vantini**



Personal information

First name / Surname **Simone Vantini**
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E-mail simone.vantini@polimi.it
Nationality Italian
Date of birth February 24, 1979
Place of birth Milano, Italy
Gender Male

Research Interests

Functional Data Analysis
High-dimensional Data Analysis
Statistical Inference
Permutation Tests
Dimension Reduction
Blind Source Separation
Risk Analysis
Geostatistics
Epigenomics
Supervised and Unsupervised Classification
Applied Statistics

Present position

Feb 2015 - present
Associate Professor of Statistics (Professore universitario di II fascia, SECS/S-01),
MOX (Laboratory for Modeling and Scientific Computing), Department of Mathematics, Politecnico di
Milano, Piazza Leonardo da Vinci 32, 20133 Milan, Italy

Past positions

Oct 2009 - Feb 2015
Assistant Professor of Statistics (Ricercatore TD, SECS/S-01, L.230/2005),
MOX (Laboratory for Modeling and Scientific Computing), Department of Mathematics "Francesco
Brioschi", Politecnico di Milano, Piazza Leonardo da Vinci 32, 20133 Milan, Italy
Apr 2008 - Sep 2009
Post Doc position (Assegnista di Ricerca L.449/1997), research project "Modelli e metodi per la
classificazione e la regressione di dati funzionali - Models and Methods for Classification and
Regression of Functional Data",
MOX (Laboratory for Modeling and Scientific Computing), Department of Mathematics "Francesco
Brioschi", Politecnico di Milano, Piazza Leonardo da Vinci 32, 20133 Milan, Italy

Visiting

Feb 2015

Umeå University, Department of Mathematics and Mathematical Statistics, Förvaltningshuset, Universitetstorget 16, 901 87 Umeå, Sweden

Nov 2013

Umeå University, Department of Mathematics and Mathematical Statistics, Förvaltningshuset, Universitetstorget 16, 901 87 Umeå, Sweden.

Feb 2012

École Centrale Paris, Laboratory of Mathematics Applied to Systems, Grande voie des vignes, 92295 Châtenay-Malabry Cedex, France.

Jan 2010

Emory University, Department of Mathematics and Computer Science, 201 Dowman Drive, Atlanta, GA 30322, United States.

Oct 2009 - Dec 2009

Massachusetts Institute of Technology, Department of Nuclear Science and Engineering, 77 Massachusetts Avenue, Cambridge, MA 02139, United States.

National Professional Qualifications

Feb 2014

National Academic Qualification as Associate Professor of Statistics (Abilitazione scientifica nazionale alla funzione di professore universitario di II fascia per il settore concorsuale 13/D1 Statistica, DD 222/2012)

2005

Professional Practice Exam in Engineering (Esame di Stato per l'abilitazione alla professione d'ingegnere, DPR 328/2001)
Politecnico di Milano,
Piazza Leonardo da Vinci 32, 20133 Milan, Italy

Education

Mar 2005 - Feb 2008

PhD in Mathematical Engineering (ISCED-2011 Level 8)
Graduate School of Politecnico di Milano and Department of Mathematics "Francesco Brioschi", Politecnico di Milano, Piazza Leonardo da Vinci 32, 20133 Milan, Italy

Sept 1998 - Dec 2004

Laurea V.O. (Bachelor + MSc) in Nuclear Engineering (ISCED-2011 Level 7)
Curriculum: Mathematics and Physics for Nuclear Technologies
Final evaluation: 100/100 cum laude
Politecnico di Milano and CESNEF (Centro Studi Nucleari Enrico Fermi)
Piazza Leonardo da Vinci 32, 20133 Milan, Italy

Sep 1993 - Jun 1998

Maturità Scientifica (ISCED-2011 Level 3A)
Final evaluation: 60/60
Liceo Scientifico Leg. Ric. Istituto Salesiano S. Ambrogio,
Via Copernico 9, 20125 Milan, Italy

Journal Articles

Secchi, P., Vantini, S., Vitelli, V. (2015):

"Analysis of spatio-temporal mobile phone data: a case study in the metropolitan area of Milan " [with discussion], *Statistical Methods and Applications*, Springer online first.

Sangalli, L. M., Secchi, P., Vantini, S. (2014):

"Object Oriented Data Analysis: a few methodological challenges" (Discussion of "Overview of object oriented data analysis" by Marron, J.S. and Alonso. A.M.), *Biometrical Journal*, Vol. 56(5), pp.774-777.

Sangalli, L.M., Secchi, P., Vantini, S. (2014):

"Rejoinder: Analysis of AneuRisk65 data", *Electronic Journal of Statistics*, Vol. 8(2), pp. 1937-1939.

Sangalli, L.M., Secchi, P., Vantini, S. (2014):

"Analysis of AneuRisk65 data: K-mean Alignment" *Electronic Journal of Statistics*, Vol. 8(2), pp. 1891-1904.

- Sangalli, L.M., Secchi, P., Vantini, S. (2014):
 "AneuRisk65: a dataset of three-dimensional cerebral vascular geometries" *Electronic Journal of Statistics*, Vol. 8(2), pp. 1879-1890.
- Bernardi, M., Sangalli, L.M., Secchi, P., Vantini, S. (2014):
 "Analysis of Juggling Data: an Application of K-mean Alignment" *Electronic Journal of Statistics*, Vol. 8(2), pp. 1817-1824.
- Patriarca, M., Sangalli, L.M., Secchi, P., Vantini, S. (2014):
 "Analysis of Spike Train Data: an Application of K-mean Alignment" *Electronic Journal of Statistics*, Vol. 8(2), pp. 1769-1775.
- Bernardi, M., Sangalli, L.M., Secchi, P., Vantini, S. (2014):
 "Analysis of Proteomics data: Block K-mean Alignment", *Electronic Journal of Statistics*, Vol. 8(2), pp. 1714-1723.
- Dalla Rosa, M., Sangalli, L.M., Vantini, S. (2014):
 "Principal Differential Analysis of the Aneurisk65 Dataset", *Advances in Data Analysis and Classification*, Vol. 8(3), pp. 287-302.
- Secchi, P., Stamm, A., Vantini, S. (2013): Inference for the Mean of Large p Small n Data: a Finite-Sample High-Dimensional Generalization of Hotelling's Theorem, *Electronic Journal of Statistics*, Vol. 7, pp. 2005–2031.
- Secchi, P., Vantini, S., Vitelli, V. (2013):
 "Bagging Voronoi classifiers for clustering spatial functional data", *International Journal of Applied Earth Observation and Geoinformation*, Vol. 22, pp. 53-64
- Passerini, T., Sangalli, L. M., Vantini, S., Piccinelli, M., Bacigaluppi, S., Antiga, L., Boccardi, E., Secchi, P., Veneziani, A. (2012):
 "An Integrated Statistical Investigation of Internal Carotid Arteries of Patients Affected by Cerebral Aneurysms", *Cardiovascular Engineering and Technology*, Vol. 3, pp. 26-40.
- Vantini, S. (2012):
 "On the Definition of Phase and Amplitude Variability in Functional Data Analysis", *Test*, Vol.21(4), pp. 676-696.
- Di Maio, F., Secchi, P., Vantini, S., Zio, E., (2011):
 "Fuzzy C-Means Clustering of Signal Functional Principal Components for Post-Processing Dynamic Scenarios of a Nuclear Power Plant Digital Instrumentation and Control System", *IEEE Transactions on Reliability*, Vol. 60, No. 2, pp. 415 - 465.
- Secchi, P., Vantini, S., Vitelli, V. (2011):
 "A clustering algorithm for spatially dependent functional data", *Procedia Environmental Sciences*, Vol.7, pp. 176-181.
- Sangalli, L. M., Secchi, P., Vantini, S., Vitelli, V. (2010):
 "k-mean Alignment for Curve Clustering", *Computational Statistics and Data Analysis*, Vol. 54., pp. 1219-1233.
- Sangalli, L. M., Secchi, P., Vantini, S., Vitelli, V. (2010):
 "Functional clustering and alignment methods with applications", *Communications in Applied and Industrial Mathematics*, Vol.1, No.1, pp. 205-224.
- Seresini, S., Origoni, M., Caputo, L., Lillo, F., Longhi, R., Vantini, S., Paganoni, A. M., Protti, M. P. (2010):
 "CD4+ T cells against human papilloma virus-18 E7 in patients with high-grade cervical lesions associate with the absence of the virus in the cervix", *Immunology*, Vol. 131(1), pp. 89-98.
- Sangalli, L.M., Secchi, P., Vantini, S., Veneziani, A. (2009):
 "A case study in exploratory functional data analysis: geometrical features of the internal carotid artery", *Journal of the American Statistical Association*, Vol. 104, No. 485, pp. 37-48.
- Sangalli, L.M., Secchi, P., Vantini, S., Veneziani, A. (2009):
 "Efficient estimation of three-dimensional curves and their derivatives by free-knot regression splines applied to the analysis of inner carotid artery centrelines", *Journal of the Royal Statistical Society, Ser. C, Applied Statistics*, Vol. 58, Part 3, pp. 285-306.
- Bacigaluppi, S., Passerini, T., Sangalli, L.M., Secchi, P., Vantini, S., Vele, S., Veneziani, A. (2008)
 "Analysis of cerebral vascular morphologies for assessing rupture risk in cerebral aneurysms", *Journal of Biomechanics*, Vol. 41, Sup. 1., pp. S9.

Seresini, S., Origoni, M., Lillo, F., Caputo, L., Paganoni, A.M., Vantini, S., Longhi, R., Taccagni, G., Ferrari, A., Secchi, P., Doglioni, C., Protti, M.P. (2007): "IFN- γ Produced by Human Papilloma Virus-18 E6-Specific CD4+ T Cells Predicts the Clinical Outcome after Surgery in Patients with High-Grade Cervical Lesions" *Journal of Immunology*, Vol.179: pp. 7176-7183.

Veneziani, A., Boccardi, E., Antiga, L., Piccinelli, M., Secchi, P., Vantini, S., Passerini, T., De Luca, M., Bacigaluppi, S. (2006): Statistical and numerical investigations of cerebral aneurysms' morphology and haemodynamics, *Journal of Biomechanics*, Vol. 39, pp. S290.

Book Chapters

Arena, M., Azzone, G., Conte, A., Secchi, P., Vantini, S. (2014), "Measuring downsize reputational risk in the Oil & Gas industry" in Paganoni, A., Secchi, P. (eds.), *Advances in Complex Data Modeling and Computational Methods in Statistics*, Springer, Milano, forthcoming.

Manfredini, F., Pucci, P., Secchi, P., Tagliolato, P., Vantini, S., Vitelli, V. (2014), "Treelet Decomposition of Mobile Phone Data for Deriving City Usage and Mobility Pattern in the Milan Urban Region". In Paganoni, A., Secchi, P. (eds.), *Advances in Complex Data Modeling and Computational Methods in Statistics*, Springer, Milano, forthcoming.

Abramowicz, K., Arnqvist, P., Sjostedt de Luna, S., Secchi, P., Vantini, S., Vitelli, V. (2014): "Was it snowing on lake Kassjon in January 4486 BC? Functional data analysis of sediment data" in Bongiorno, E.G., Salinelli, E., Goia, A., Vieu, P. (eds) *Contributions in infinite-dimensional statistics and related topics*, pp. 7-12, Esculapio Pub. Co., Bologna,

Abramowicz, K., Pini, A., Schelin, L., Strandberg, J., Vantini, S. (2014) "An Inferential Framework for Domain Selection in Functional ANOVA" in Bongiorno, E.G., Salinelli, E., Goia, A., Vieu, P. (eds) *Contributions in infinite-dimensional statistics and related topics*, pp. 13-18, Esculapio Pub. Co., Bologna,

Sangalli, L. M., Secchi, P., Vantini, S., Vitelli, V. (2012): "Joint Clustering and Alignment of Functional Data: an Application to Vascular Geometries", in Di Ciaccio, A.; Coli, M.; Angulo Ibanez, J.M (eds) *Advanced Statistical Methods for the Analysis of Large Data-Sets* *Advanced Statistical Methods for the Analysis of Large Data-Sets*, pp. 33-43, Springer.

Secchi, P., Vantini, S., Vitelli, V. (2011): "Spatial Clustering of Functional Data", in Ferraty, F. (ed), *Recent Advances in Functional Data Analysis and Related Topics*, pp. 283-290, Springer-Verlag.

Sangalli, L.M., Secchi, P., Vantini, S. (2008): "Explorative functional data analysis for 3D-geometries of the Inner Carotid Artery", in Dabo-Niang, S., Ferraty, F. (eds), *Functional and Operatorial Statistics*, pp. 289-296, Springer.

Book Editor

Guglielmi, A., Paganoni, A. M., Sangalli, L. M., Secchi, P., Vantini, S. (eds.) (2013): "S. Co. 2013 Eighth Conference Complex data modeling and computationally intensive statistical methods for estimation and prediction - Proceedings", Poliscrypt, Milan.

Paganoni, A. M., Sangalli, L. M., Secchi, P., Vantini, S. (eds.) (2009): "S. Co. 2009 Sixth Conference Complex data modeling and computationally intensive statistical methods for estimation and prediction - Proceedings", Maggioli Editore, Milan.

Journal Articles Under Revision

Abramowicz, K., De Luna, S., Häger, C., Pini, A., Schelin, L., Vantini, S. (2015): "Distribution-Free Interval-Wise Inference for Functional-on-Scalar Linear Models" *Mox Report 3/2015*, Department of Mathematics, Politecnico di Milano.

Pini, A., Stamm, A., Vantini, S. (2015): "Hotelling's T^2 in Functional Hilbert Spaces" *Mox Report 1/2015*, Department of Mathematics, Politecnico di Milano.

Canale, A., Vantini, S. (2014): "Constrained Functional Time Series: an Application to Demand and Supply Curves in the Italian Natural Gas Balancing Platform" *Mox Report 42/2014*, Department of Mathematics, Politecnico di Milano.

- Hébert-Losier, K., Pini, A., Vantini, S., Strandberg J., Abramowicz, K., Schelin, L., Häger, C. (2014): "Novel functional data analysis method applied to one-leg hop kinematics part of a long-term follow-up on anterior cruciate ligament ruptures".
- Arena, M., Azzone, G., Conte, A., Secchi, P., Vantini, S. (2014), "Identifying reputational risk factors in the oil and gas industry".
- Secchi, P., Vantini, S., Zanini, P. (2014): "Hierarchical Independent Component Analysis: a multi-resolution non-orthogonal data-driven basis" *Mox Report 01/2014*, Department of Mathematics, Politecnico di Milano.
- Pini, A., Vantini, S. (2013): "The Interval Testing Procedure: Inference for Functional Data Controlling the Family Wise Error Rate on Intervals". *Mox Report 13/2013*, Department of Mathematics, Politecnico di Milano. .

Conference Proceedings

- Zanini, P., Secchi, P., Vantini, S. (2014): Multi-resolution analysis of EEG signals through Hierarchical Independent Component Analysis, Nordstat 2014 - 25th Nordic Conference in Mathematical statistics, June 2-6, 2014, Turku (Finland).
- Vantini, S., Secchi, P., Zanini, P. (2014): The Virtuous Cycle of Big Data and Big Cities: a Case Study from Milan, 47th Scientific Meeting of the Italian Statistical Society, Cagliari - June 11-13, 2014, Cagliari (Italy).
- Vantini, S., Pini, A. (2014): Hypothesis Testing in Functional Data Analysis: a Non-parametric Approach, 47th Scientific Meeting of the Italian Statistical Society, Cagliari - June 11-13, 2014, Cagliari (Italy).
- Zanini, P., Secchi, P., Vantini, S. (2014): EEG signals decomposition: a multi-resolution analysis, 47th Scientific Meeting of the Italian Statistical Society, Cagliari - June 11-13, 2014, Cagliari (Italy).
- Cremona, M., Pelicci, P.G., Riva, L., Sangalli, L., Secchi, P., Vantini, S. (2014): Cluster analysis on shape indices for ChIP-Seq data, 47th Scientific Meeting of the Italian Statistical Society, Cagliari - June 11-13, 2014, Cagliari (Italy).
- Pini, A., Abramowicz, K., Häger, C., Hébert-Losier, K., Schelin, L., Strandberg, J., Vantini, S. (2014): Anterior Cruciate Ligament Rupture: Functional Data Analysis of Knee Motion, 47th Scientific Meeting of the Italian Statistical Society, Cagliari - June 11-13, 2014, Cagliari (Italy).
- Petrone, A., Rainaldi, I., La Rosa, L., Scatagli, L., Arena, M., Vantini, S. (2014): Evaluating reputational risk and implications of a Major Accident Hazard in E&P activity: a qualitative methodology, 2014 SPE International Conference on Health, Safety, and Environment, March 17-19, 2014, Long Beach CA (United States).
- Pini, A., Vantini, S. (2013): The Interval-Wise Control of the Family-Wise Error Rate for Testing Functional Data, Cladag 2013. 9th Meeting of the Classification and Data Analysis Group. Book of Abstracts, September 18-20, 2013, Modena (Italy)
- Arena, M., Conte, A., Vantini, S. (2013): Measuring downsize reputational risk in the oil and gas industry, S.Co. 2013 Complex Models and Computational Intensive Methods for Estimation and Prediction, September 9-11, 2013, Milan (Italy).
- Pini, A., Vantini, S. (2013): Inference for Functional Data: the Interval-Wise Control of the Family-Wise Error Rate, S.Co. 2013 Complex Models and Computational Intensive Methods for Estimation and Prediction, September 9-11, 2013, Milan (Italy).
- Canale, A., Vantini, S. (2013): Analysis of demand and supply curves in the Italian natural gas market through functional time series. S.Co. 2013 Complex Models and Computational Intensive Methods for Estimation and Prediction, September 9-11, 2013, Milan (Italy).
- Secchi, P., Vantini, S., Zanini, P. (2013): Discovering Spatiotemporal Patterns of Urban Life from Mobile Data: an Exploration through Hierarchical Independent Component Analysis, S.Co. 2013 Complex Models and Computational Intensive Methods for Estimation and Prediction, September 9-11, 2013, Milan (Italy).
- Cremona, M., Riva, L., Sangalli, L., Secchi, P., Vantini, S. (2013): Clustering ChIP-Seq data using peak shape, S.Co. 2013 Complex Models and Computational Intensive Methods for Estimation and Prediction, September 9-11, 2013, Milan (Italy).
- Pini, A., Vantini, S. (2013): Interval-Wise Control of the Family Wise Error Rate: a New Inferential Procedure in Functional Data Analysis, The 8th International Conference on Multiple Comparison Procedures, July 8-11, 2013, Southampton (UK)

- Ghazy, G., Ricotti, M., Menafoglio, A., Secchi, P., Vantini, S. (2012): Cluster analysis of nuclear performance trends, Book of Abstracts European Nuclear Conference 2012, December 9-12 2012, Manchester (UK)
- Vantini, S., Vitelli, V., Zanini, P. (2012):
 "Treelet Analysis and Independent Component Analysis of Milan Mobile-Network Data: Investigating Population Mobility and Behavior",
 Analysis and Modeling of Complex Data in Behavioural and Social Sciences - Joint Meeting of the Italian and the Japanese Statistical Societies, September 3 – 4, 2012, Anacapri (Italy).
- Secchi, P., Vantini, S., Vitelli, V.: (2012):
 "Bagging Voronoi-classifiers for clustering spatial functional data"
 Proceedings of the Ninth International Geostatistics Congress, June 11 – 15, 2012, Oslo (Norway).
- Pini, A., Vantini, S.: (2012):
 "Testing Phase and Amplitude Variability in Functional Data Analysis: a Hierarchical Permutation Test Approach" Proceedings of the XLVI Scientific Meeting of the Italian Statistical Society, Cleup, June 20-22, 2012, Rome (Italy).
- Vantini, S.: (2012):
 "A Topological Definition of Phase and Amplitude Variability of Functional Data"
 Proceedings of the XLVI Scientific Meeting of the Italian Statistical Society, Cleup, June 20-22, 2012, Rome (Italy).
- Secchi, P., Vantini, S., Zanini, P.: (2012):
 "Independent Component Analysis of Milan Mobile Network Data"
 Proceedings of the XLVI Scientific Meeting of the Italian Statistical Society, Cleup, June 20-22, 2012, Rome (Italy).
- Secchi, P., Stamm, A., Vantini, S. (2011):
 "A Generalization of Hotelling's Theorem for Large p Small n Data"
 S.Co. 2011 Complex Models and Computational Intensive Methods for Estimation and Prediction, September 19-21, 2011, Padua (Italy).
- Secchi, P., Vantini, S., Vitelli, V. (2011):
 "Clustering spatially dependent functional data",
 8th International Meeting of the Classification and Data Analysis Group of the Italian Statistical Society (CLADAG), September 7 – 9, 2011, Pavia.
- Sangalli, L.M., Secchi, P., Vantini, S., Vitelli, V. (2010):
 "Classification of Functional Data: Unsupervised Curve Clustering When Curves are Misaligned."
 Joint Statistical Meeting 2010, July 31 - August 5, 2010, Vancouver (Canada).
- Dalla Rosa, M., Sangalli, L.M., Vantini, S. (2010):
 "Data Reduction by means of Principal Differential Analysis: an Application to the Study of the Geometrical Features of the Internal Carotid Artery"
 XLV Scientific Meeting of the Italian Statistical Society, June 16-18, 2010, Padua (Italy).
- Secchi, P., Stamm, A., Vantini, S. (2010):
 "Large p Small n: Inference for the Mean"
 XLV Scientific Meeting of the Italian Statistical Society, June 16-18, 2010, Padua (Italy).
- Sangalli, L.M., Secchi, P., Vantini, S., Vitelli, V. (2010):
 "Functional clustering and alignment"
 XLV Scientific Meeting of the Italian Statistical Society, June 16-18, 2010, Padua (Italy).
- Sangalli, L.M., Secchi, P., Vantini, S., Vitelli, V. (2009):
 "K-mean clustering of misaligned functional data"
 XVI Joint Meeting of the French Society of Classification, September 2-4, Grenoble (France)
- Vantini, S. (2009):
 "On the Definition of Phase and Amplitude Variability in Functional Data Analysis"
 S.Co. 2009 Complex Models and Computational Intensive Methods for Estimation and Prediction, September 14-16, 2009, Milan (Italy).
- Sangalli, L.M., Secchi, P., Vantini, S., Vitelli, V. (2009):
 "Curve clustering for misaligned data: the k-mean alignment algorithm"
 S.Co. 2009 Complex Models and Computational Intensive Methods for Estimation and Prediction, September 14-16, 2009, Milan (Italy).

- Di Maio, F., Secchi, P., Vantini, S., Zio, E. (2009)
 "Functional Principal Component Analysis for Dynamic Fault Scenario Classification"
 S.Co. 2009 Complex Models and Computational Intensive Methods for Estimation and Prediction,
 September 14-16, 2009, Milan (Italy).
- Di Maio, F., Secchi, P., Stasi, M., Vantini, S., Zio, E. (2009)
 "Dynamic Fault Scenarios for Fuzzy C-mean Clustering Classification"
 S.Co. 2009 Complex Models and Computational Intensive Methods for Estimation and Prediction,
 September 14-16, 2009, Milan (Italy).
- Passerini, T., Veneziani, A., Sangalli, L.M., Secchi, P., Vantini, S. (2009)
 "Wall shear stress in the Internal Carotid Artery and its relation to aneurysm location"
 1st International Conference on Mathematical and Computational Biomedical Engineering -
 CMBE2009, June 29 - July 1, 2009, Swansea (United Kingdom)
- Sangalli, L.M., Secchi, P., Vantini, S. (2008):
 "A case study in functional data analysis, investigating the geometry of the internal carotid artery for
 cerebral aneurysms classification",
 44th Scientific Meeting of the Italian Statistical Society, June 25-27, Arcavacata di Rende (Italy)
- Sangalli, L.M., Vantini, S. (2008):
 "Free knot regression splines for 3-dimensional functional data, with applications to the analysis of
 Inner Carotid Artery centerlines",
 44th Scientific Meeting of the Italian Statistical Society, June 25-27, Arcavacata di Rende (Italy)
- Sangalli, L.M., Vantini, S. (2008):
 "Registration of Functional Data: Aligning Inner Carotid Artery Centerlines", conference proceedings of
 44th Scientific Meeting of the Italian Statistical Society, June 25-27, Arcavacata di Rende (Italy)
- Bacigaluppi, S., Antiga, L., Passerini, T., Piccinelli, M., Vantini, S., Sangalli, L., Remuzzi, A., Secchi,
 P., Collice, M., Boccardi, E., Veneziani, A. (2008):
 "Geometric analysis of the Internal Carotid Artery (ICA) in relation to aneurysms",
 59th Annual Meeting of the German Society of Neurosurgery (DGNC) - 3rd Joint Meeting with the
 Italian Neurosurgical Society (SINch), June 1-4, 2008, Würzburg (Germany)
- Sangalli, L.M., Secchi, P., Vantini, S. (2007)
 "Functional Data Analysis for 3D-Geometries of the Inner Carotid Artery",
 S.Co. 2007 Complex Models and Computational Intensive Methods for Estimation and Prediction,
 September 6-8, Venice (Italy)
- Sangalli, L.M., Secchi, P., Vantini, S. (2007):
 "Functional Data Analysis for 3D-Geometries of the Inner Carotid Artery"
 Book of Short Papers S.Co. 2007 Complex Models and Computational Intensive Methods for
 Estimation and Prediction, pp. 427-432. Mantovan, P., Pastore, A., Tonellato, S. (eds.) CLEUP Editore

Other Publications

- Vantini, S. (2010):
 "Hard Math Cafè... quando i duri cominciano a giocare ...", *Maddmaths*, October 4, 2010.
- Vantini, S. (2010):
 "La statistica e gli aneurismi: il logaritmo che può salvare la vita", pp. 116-117, *Newton*, 4, June 2010,
 RCS.
- Vantini, S. (2008):
Functional Data Analysis of the Geometrical Features of the Internal Carotid Artery,
 PhD Thesis, Politecnico di Milano.
- Paganoni, A.M., Secchi, P., Vantini, S. (2007):
 "Direttiva per la tutela dei clienti finali di energia elettrica interessati da interruzioni prolungate o estese
 (Delibera del 12-07-2007 n. 172/07), Relazione Tecnica Autorità per l'Energia Elettrica e il Gas
 Appendice 2 – Metodo statistico per l'identificazione di periodi di condizioni eccezionali"
 (Technical Report of the Italian Authority for Electricity and Gas Energy, Appendix 2 – Statistical tool
 for the identification of exceptional event periods)
Gazzetta Ufficiale della Repubblica Italiana n. 189 del 16-08-2007 Supplemento ordinario n. 181
- Vantini, S. (2006):
 "Response Adaptive Randomization: Sequential Estimation Methods"
Sequential Design and Analysis with Application to Clinical Trials,
 Rosenberger, W.F., Hu, F. (eds), Quaderno del Corso Estivo di Statistica e Calcolo delle Probabilità,
 Istituto di Metodi Quantitativi, Università Bocconi, No. 13, pp. 74-84

Vantini, S. (2004):
Il Problema della Classificazione Statistica e i CART: Teoria e Applicazioni
(Statistical Classification and CART: Theory and Applications)
Master Degree Thesis, Politecnico di Milano.

**Invited Talks
at Conferences
(speaker in bold)**

Vantini, S. (2015):
"Gas supply and Demand Curves"
Workshop on Functional Data Analysis, February 24-26, 2015, Umea (Sweden).

Vantini, S. (2015):
"Telecom Italia Database",
Workshop on Functional Data Analysis, February 24-26, 2015, Umea (Sweden).

Arena, M., Parodi, A. C., **Vantini, S.** (2015):
"Assessing Reputational Risk with Functional Data Analysis",
Fifth International Workshop on Social Network Analysis, April 29-30, 2015, Anacapri (Italy)

Abramowicz, K., **Pini, A.**, Schelin, L., Sjostedt de Luna, S., Strandberg, J., Vantini, S. (2014):
"A domain-selective functional ANCOVA for the study of knee movement",
7th International Conference of the ERCIM Working Group on Computing & Statistics (ERCIM 2014)
December 6-8, 2014, Pisa (Italy).

Secchi, P., **Vantini, S.**, P., Zanini, P. (2014):
"La città che sale: a modern view of the city of Milan through mobile-network data",
7th International Conference of the ERCIM Working Group on Computing & Statistics (ERCIM 2014)
December 6-8, 2014, Pisa (Italy).

Vantini, S. (2014):
" Functional Data Analysis and Cluster Analysis: a Marriage with some Constraints"
Workshop on Clustering methods and their applications, November 28, 2014, Bozen-Bolzano (Italy).

Vantini, S., Azzone, G. (2014):
"La visione manageriale, Fragilità e rischio nel governo della websociety",
Miworld, July 3, 2014, Milan (Italy).

Vantini, S., Secchi, P., Zanini, P. (2014):
"The Virtuous Cycle of Big Data and Big Cities: a Case Study from Milan",
47th Scientific Meeting of the Italian Statistical Society, Cagliari - June 11-13, 2014, Cagliari (Italy).

Vantini, S., Pini, A. (2014):
"Hypothesis Testing in Functional Data Analysis: a Non-parametric Approach",
47th Scientific Meeting of the Italian Statistical Society, Cagliari - June 11-13, 2014, Cagliari (Italy).

Arena, M., **Conte, A.**, Vantini, S. (2014):
"Possiamo misurare il rischio reputazionale?",
XXVIII Convegno Nazionale AIEA: Frameworks e Metodi al servizio di Innovazione e Regole, June
11-12, 2014, Milan (Italy).

Arena, M., Vantini, S. (2014):
"Can we measure reputational risk?",
12th European Academic Conference on Internal Audit and Corporate Governance, April 9-11, 2014,
Como (Italy).

Pini, A., **Vantini, S.** (2013):
"The Interval Wise Error Rate for Functional Data: the Interval Testing Procedure in Action",
6th International Conference of the ERCIM Working Group on Computing & Statistics (ERCIM 2013)
December 14-16, 2013, London (UK).

Sangalli, L.M., Secchi, P., **Vantini, S.**, Vitelli, V. (2013):
"Kmean Alignment: an algorithm for jointly clustering and aligning functional data",
Mini-Workshop of Functional Data Analysis, November 6, Umeå (Sweden).

Secchi, P., Vantini, S., **Vitelli, V.** (2013):
"The Bagging Voronoi strategy for the analysis of spatially dependent functional data",
Mini-Workshop of Functional Data Analysis, November 6, Umeå (Sweden).

Pini, A., Vantini, S. (2013):
"The Interval Testing Procedure: a novel inferential tool for functional data",
Mini-Workshop of Functional Data Analysis, November 6, Umeå (Sweden).

- Secchi, P., **Vantini, S.**, Zanini, P. (2013):
 "Discovering Spatiotemporal Patterns of Urban Life from Mobile Data: an Exploration through Hierarchical Independent Component Analysis",
 S.Co. 2013 Complex Models and Computational Intensive Methods for Estimation and Prediction, September 9-11, 2013, Milan (Italy).
- Vantini, S.** (2012):
 "Detecting temporal-patterns in spatially-dependent high-dimensional data: analysis of mobile-phone network data in a urban setting"
 5th International Conference of the ERCIM Working Group on Computing & Statistics (ERCIM 2012) December 1-3, 2012, Oviedo (Spain).
- Vantini, S.** (2012):
 "A Non-parametric Approach to the Analysis of Spatially-dependent Functional Data based on Random Voronoi Maps"
 Workshop on New Perspectives in Functional Data Analysis,
 September 26-27, Caserta (Italy).
- Ramsay, J., Romano, E., Vantini, S.** (2012):
 "Functional Data Analysis", Tutorial at Workshop on New Perspectives in FDA, Seconda Università degli Studi di Napoli, 2012.
- Sangalli, L.M., **Secchi, P.**, Vantini, S. (2012):
 "Rejoinder of AneuRisk data: Joint Clustering and Alignment of Functional Data: The K-mean Alignment Algorithm"
 MBI Workshop CTW: Statistics of Time Warpings and Phase Variations, November 13-16, 2012. Columbus, OH, (United States).
- Sangalli, L.M., Secchi, P., **Vantini, S.** (2012):
 "Spike-train data: Joint Clustering and Alignment of Functional Data: The K-mean Alignment Algorithm"
 MBI Workshop CTW: Statistics of Time Warpings and Phase Variations, November 13-16, 2012. Columbus, OH, (United States).
- Sangalli, L.M.**, Secchi, P., Vantini, S. (2012):
 "Proteomic data: Joint Clustering and Alignment of Functional Data: The K-mean Alignment Algorithm"
 MBI Workshop CTW: Statistics of Time Warpings and Phase Variations, November 13-16, 2012. Columbus, OH, (United States).
- Sangalli, L.M., Secchi, P., **Vantini, S.** (2012):
 "Juggling data: Joint Clustering and Alignment of Functional Data: The K-mean Alignment Algorithm"
 MBI Workshop CTW: Statistics of Time Warpings and Phase Variations, November 13-16, 2012. Columbus, OH, (United States).
- Sangalli, L.M.**, Secchi, P., **Vantini, S.** (2012):
 "AneuRisk data: Joint Clustering and Alignment of Functional Data: The K-mean Alignment Algorithm"
 MBI Workshop CTW: Statistics of Time Warpings and Phase Variations, November 13-16, 2012. Columbus, OH, (United States).
- Sangalli, L.M., **Secchi, P.**, Vantini, S. (2012):
 "Presentation of the AneuRisk data"
 MBI Workshop CTW: Statistics of Time Warpings and Phase Variations, November 13-16, 2012. Columbus, OH, (United States).
- Vantini, S.**, (2012):
 "Treelet Analysis and Independent Component Analysis of Milan Mobile-Network Data: Investigating Population Mobility and Behavior",
 Analysis and Modeling of Complex Data in Behavioural and Social Sciences - Joint Meeting of of the Italian and the Japanese Statistical Societies, September 3 – 4, 2012, Anacapri (Italy).
- Vantini, S.**, (2012):
 "Ten Years of Statistics @ MOX",
 MOX10 : Immaginare il Futuro con uno Sguardo al Passato, May 28, 2012, Milan (Italy).
- Secchi, P., Vantini, S., **Vitelli, V.** (2011):
 "Clustering spatially dependent functional data",
 8th International Meeting of the Classification and Data Analysis Group of the Italian Statistical Society (CLADAG), September 7 – 9, 2011, Pavia.

- Sangalli, L.M., Secchi, P., **Vantini, S.** (2011):
 "Vessel Geometry and Hemodynamics vs Cerebral Aneurysm Formation and Rupture: Functional Data Analysis of the Internal Carotid Artery"
 7th International Congress on Industrial and Applied Mathematics - ICIAM 2011,
 July 18 – 22, 2011, Vancouver, BC, Canada.
- Sangalli, L.M.**, Secchi, P., Vantini, S. (2011):
 "Functional Data Analysis of Three-dimensional Cerebral Vascular Geometries for the Study of Aneurysms Pathogenesis"
 SIAM Conference on Computational Science and Engineering (CSE11), February 28 - March 4, 2011.
 Reno, NE, United States.
- Sangalli, L.M.**, Secchi, P., Vantini, S., Vitelli, V. (2010):
 "Classification of Functional Data: Unsupervised Curve Clustering When Curves are Misaligned."
 Joint Statistical Meeting 2010, July 31 - August 5, 2010, Vancouver (Canada).
- Dalla Rosa, M., Sangalli, L.M., **Vantini, S.** (2010):
 "Data Reduction by means of Principal Differential Analysis: an Application to the Study of the Geometrical Features of the Internal Carotid Artery"
 XLV Scientific Meeting of the Italian Statistical Society, June 16-18, 2010, Padua (Italy).
- Vantini, S.** (2009):
 "Joint Clustering and Alignment of Functional Data: an Application to Vascular Geometries"
 Italian Statistical Society International Intermediate Meeting on Statistical methods for the analysis of large data-sets, September 23-25, 2009, Pescara (Italy)
- Sangalli, L.M.**, Secchi, P., Vantini, S., Vitelli, V. (2009):
 "K-mean clustering of misaligned functional data"
 XVI Joint Meeting of the French Society of Classification, September 2-4, Grenoble (France)
- Sangalli, L.M., **Secchi, P.**, Vantini, S. (2008):
 "A case study in functional data analysis, investigating the geometry of the internal carotid artery for cerebral aneurysms classification",
 44th Scientific Meeting of the Italian Statistical Society, June 25-27, Arcavacata di Rende (Italy)
- Sangalli, L.M., **Secchi, P.**, Vantini, S. (2007):
 "Functional Data Analysis for 3D-Geometries of the Inner Carotid Artery",
 S.Co. 2007 Complex Models and Computational Intensive Methods for Estimation and Prediction,
 September 6-8, Venice (Italy)

**Contributed Talks
 at Conferences
 (speaker in bold)**

- Zanini, P.**, Secchi, P., Vantini, S. (2014):
 "Multi-resolution analysis of EEG signals through Hierarchical Independent Component Analysis",
 Nordstat 2014 - 25th Nordic Conference in Mathematical statistics, June 2-6, 2014, Turku (Finland).
- Pini, A.**, Abramowicz, K., Häger, C., Hébert-Losier, K., Schelin, L., Strandberg, J., Vantini, S. (2014):
 "Anterior Cruciate Ligament Rupture: Functional Data Analysis of Knee Motion",
 47th Scientific Meeting of the Italian Statistical Society, Cagliari - June 11-13, 2014, Cagliari (Italy).
- Zanini, P.**, Secchi, P., Vantini, S. (2014):
 "EEG signals decomposition: a multi-resolution analysis",
 47th Scientific Meeting of the Italian Statistical Society, Cagliari - June 11-13, 2014, Cagliari (Italy).
- Cremona, M.**, Pelicci, P.G., Riva, L., Sangalli, L., Secchi, P., Vantini, S. (2014):
 "Cluster analysis on shape indices for ChIP-Seq data",
 47th Scientific Meeting of the Italian Statistical Society, Cagliari - June 11-13, 2014, Cagliari (Italy).
- Petrone, A., Rainaldi, I., La Rosa, L., **Scataglini, L.**, Arena, M., Vantini, S. (2014):
 "Evaluating reputational risk and implications of a Major Accident Hazard in E&P activity: a qualitative methodology",
 2014 SPE International Conference on Health, Safety, and Environment, March 17-19, 2014, Long Beach CA (United States).
- Pini, A.**, Vantini, S. (2013):
 "The Interval-Wise Control of the Family-Wise Error Rate for Testing Functional Data",
 9th International Meeting of the Classification and Data Analysis Group of the Italian Statistical Society (CLADAG), September 18-20, 2013, Modena (Italy)

- Arena, M., Conte, A., Vantini, S. (2013):**
 "Measuring downside reputational risk in the oil and gas industry",
 S.Co. 2013 Complex Models and Computational Intensive Methods for Estimation and Prediction,
 September 9-11, 2013, Milan (Italy).
- Pini, A., Vantini, S. (2013):**
 "Inference for Functional Data: the Interval-Wise Control of the Family-Wise Error Rate",
 S.Co. 2013 Complex Models and Computational Intensive Methods for Estimation and Prediction,
 September 9-11, 2013, Milan (Italy).
- Canale, A., Vantini, S. (2013):**
 "Analysis of demand and supply curves in the Italian natural gas market through functional time series".
 S.Co. 2013 Complex Models and Computational Intensive Methods for Estimation and Prediction,
 September 9-11, 2013, Milan (Italy).
- Cremona, M., Riva, L., Sangalli, L., Secchi, P., Vantini, S. (2013):**
 "Clustering ChIP-Seq data using peak shape",
 S.Co. 2013 Complex Models and Computational Intensive Methods for Estimation and Prediction,
 September 9-11, 2013, Milan (Italy).
- Pini, A., Vantini, S. (2013):**
 "Interval-Wise Control of the Family Wise Error Rate: a New Inferential Procedure in Functional Data Analysis",
 8th International Conference on Multiple Comparison Procedures, July 8-11, 2013, Southampton (UK)
- Pini, A., Vantini, S. (2013):**
 "Interval Testing Procedure for Functional Data",
 Young Statisticians' Meeting YSM2013, July 4-5, 2013, London (UK)
- Ghazy, G., Ricotti, M., Menafoglio, A., Secchi, P., Vantini, S. (2012):**
 "Cluster analysis of nuclear performance trends",
 Book of Abstracts European Nuclear Conference 2012, December 9-12 2012, Manchester (UK)
- Secchi, P., Vantini, S., **Zanini, P. (2012):**
 "Decomposition of Metropolitan Mobile-network Data Through Independent Component Analysis"
 5th International Conference of the ERCIM Working Group on Computing & Statistics (ERCIM 2012)
 December 1-3, Oviedo (Spain).
- Secchi, P., Vantini, S., **Vitelli, V. (2012):**
 "Bagging Voronoi-classifiers for clustering spatial functional data"
 Ninth International Geostatistics Congress, June 11 – 15, 2012, Oslo (Norway).
- Pini, A., Vantini, S. (2012):**
 "Testing Phase and Amplitude Variability in Functional Data Analysis: a Hierarchical Permutation Test Approach"
 XLVI Scientific Meeting of the Italian Statistical Society, June 20-22, 2012, Rome (Italy).
- Vantini, S. (2012):**
 "A Topological Definition of Phase and Amplitude Variability of Functional Data"
 XLVI Scientific Meeting of the Italian Statistical Society, June 20-22, 2012, Rome (Italy).
- Secchi, P., Vantini, S., **Zanini, P. (2012):**
 "Independent Component Analysis of Milan Mobile Network Data"
 XLVI Scientific Meeting of the Italian Statistical Society, June 20-22, 2012, Rome (Italy).
- Secchi, P., **Vantini, S., Vitelli, V. (2011):**
 "Spatial Clustering of Functional Data",
 International Workshop on Functional and Operatorial Statistics IWFO'S'2011, Santander (Spain)
- Secchi, P., Vantini, S., **Vitelli, V. (2011):**
 "A clustering algorithm for spatially dependent functional data",
 1st Conference on Spatial Statistics 2011, Mapping Global Change
 March 23-25, 2011, Enschede (the Netherlands).
- Manfredini, F., Tagliolato, P., Vantini, S., **Vitelli, V. (2010):**
 "Spatially dependent functional data: city planning through local telephonic time patterns"
 3rd International Conference of the ERCIM (European Research Consortium for Informatics and Mathematics) Working Group on Computing & Statistics (ERCIM 10), December 10-12, London (UK).
- Secchi, P., Stamm, A., **Vantini, S. (2010):**
 "Large p Small n: Inference for the Mean"
 XLV Scientific Meeting of the Italian Statistical Society, June 16-18, 2010, Padua (Italy).

- Sangalli, L.M., Secchi, P., Vantini, S., **Vitelli, V.** (2010):
 "Functional clustering and alignment"
 XLV Scientific Meeting of the Italian Statistical Society, June 16-18, 2010, Padua (Italy).
- Vantini, S.** (2009):
 "On the Definition of Phase and Amplitude Variability in Functional Data Analysis"
 S.Co. 2009 Complex Models and Computational Intensive Methods for Estimation and Prediction, September 14-16, 2009, Milan (Italy).
- Sangalli, L.M., Secchi, P., Vantini, S., **Vitelli, V.** (2009):
 "Curve clustering for misaligned data: the k-mean alignment algorithm"
 S.Co. 2009 Complex Models and Computational Intensive Methods for Estimation and Prediction, September 14-16, 2009, Milan (Italy).
- Di Maio, F., Secchi, P., **Vantini, S.**, Zio, E. (2009)
 "Functional Principal Component Analysis for Dynamic Fault Scenario Classification"
 S.Co. 2009 Complex Models and Computational Intensive Methods for Estimation and Prediction, September 14-16, 2009, Milan (Italy).
- Di Maio, F., Secchi, P., **Stasi, M.**, Vantini, S., Zio, E. (2009)
 "Dynamic Fault Scenarios for Fuzzy C-mean Clustering Classification"
 S.Co. 2009 Complex Models and Computational Intensive Methods for Estimation and Prediction, September 14-16, 2009, Milan (Italy).
- Passerini, T.**, Veneziani, A., Sangalli, L.M., Secchi, P., Vantini, S. (2009)
 "Wall shear stress in the Internal Carotid Artery and its relation to aneurysm location"
 1st International Conference on Mathematical and Computational Biomedical Engineering - CMBE2009, June 29 - July 1, 2009, Swansea (United Kingdom)
- Sangalli, L.M., **Secchi, P.**, Vantini, S. (2008):
 "Explorative functional data analysis for 3D-geometries of the Inner Carotid Artery",
 First international Workshop on Functional and Operatorial Statistics IWFO'S'2008, Toulouse (France).
- Sangalli, L.M.**, Vantini, S. (2008):
 "Free knot regression splines for 3-dimensional functional data, with applications to the analysis of Inner Carotid Artery centerlines",
 44th Scientific Meeting of the Italian Statistical Society, June 25-27, Arcavacata di Rende (Italy)
- Sangalli, L.M., **Vantini, S.** (2008):
 "Registration of Functional Data: Aligning Inner Carotid Artery Centerlines", conference proceedings of 44th Scientific Meeting of the Italian Statistical Society, June 25-27, Arcavacata di Rende (Italy)
- Bacigaluppi, S.**, Antiga, L., Passerini, T., Piccinelli, M., Vantini, S., Sangalli, L., Remuzzi, A., Secchi, P., Collice, M., Boccardi, E., Veneziani, A. (2008):
 "Geometric analysis of the Internal Carotid Artery (ICA) in relation to aneurysms",
 59th Annual Meeting of the German Society of Neurosurgery (DGNC) - 3rd Joint Meeting with the Italian Neurosurgical Society (SINch), June 1-4, 2008, Würzburg (Germany)
- Bacigaluppi, S.**, Antiga, L., Piccinelli, M., Vantini, S., Passerini, T., Sangalli, L.M., Boccardi, E., Secchi, P., Veneziani, A. (2007):
 "Possible role of the morphology of the parent vessel on the development of hemodynamical unfavourable wall stress . study on cerebral aneurysm"
 56th National Meeting of the Italian Society of Neurosurgery - Joint Meeting with Congress of Neurological Surgeons, June 24-26, 2007, Rome (Italy)
- Secchi, P., **Vantini, S.** (2006):
 "Statistical Analysis of the Geometry and Fluidynamics of Cerebral Arteries",
 III International Symposium on Modelling of Physiological Flows - MPF2006, September 25-27, 2006, Bergamo (Italy)

R-packages

- Secchi, P., Vantini, S., Zanini, P. (2014):
"fastHICA" Hierarchical Independent Component Analysis: a multi-scale sparse non-orthogonal data-driven basis.
- Pini, A., Vantini, S. (2013):
"fdatest" Interval Testing Procedure for functional data.
- Parodi, A., Patriarca, M., Sangalli, L., Secchi, P., Vantini, S., Vitelli, V. (2013):
"fdakma" Functional Data Analysis: K-Mean Alignment.

Research Grants with Competitive Selection Calls

Statistical modelling of varved lake sediment to reconstruct seasonal climate over the past 6000 years (Jan 2014 - Dec 2017)

Role in the research project: **Participant**

Funding Program: 2013 Project Research Grant - Statistics in the Empirical Sciences

Funding Agency: Vetenskapsrådet - Swedish Research Council

Partners: Umeå University, Politecnico di Milano,

Grant: **500k€**

ElectrisK (Sep 2013 - Jul 2014)

Role in the research project: **Principal Investigator**

Funding Program: Energie per la ricerca (20 winners, 320 applicants)

Funding Agency: Fondazione CRUI and Enel Foundation

Partners: Politecnico di Milano

Grant: **15k€**

Large P Small N (Nov 2011 - Dec 2013)

Role in the research project: **Principal Investigator**

Funding Program: 5 per 1000 Junior - 2010 (1st classified, 11 winners, 56 applicants)

Funding Agency: Politecnico di Milano

Partners: Politecnico di Milano, University of Rennes I, Emory University

Grant: **65k€**

Modelli numerici per il calcolo scientifico ed applicazioni avanzate (Oct 2011 - Oct 2013)

Role in the research project: **Participant**

Funding Program: PRIN 2009

Funding Agency: MIUR (Ministry of Education, University, and Research)

Partners: Politecnico di Milano, University of Milan, La Sapienza University of Rome, University of Pavia

Grant: **260k€**

Green Move (Feb 2011 - Aug 2013)

Role in the project: **Task Coordinator**

Funding Program: Fondo per la promozione di accordi istituzionali - Bando accordi istituzionali

Funding Agency: Regione Lombardia

Partners: Politecnico di Milano

Grant: **95k€** (amount pertaining to the Department of Mathematics)

MOTUS - Mobility and Tourism in Urban Scenarios (Feb 2009 - Sept 2014)

Role in the research project: **Task Coordinator**

Funding Program: Industria 2015 – Progetti di Innovazione Industriale - Bando Mobilità Sostenibile

Funding Agency: MISE (Ministry of Economic Development)

Partners: Politecnico di Milano, University of Pisa, University of Venice, University of Trento, Catholic University of Milan

Grant: **50k€** (amount pertaining to the Department of Mathematics)

Metodi numerici avanzati per il calcolo scientifico (Oct 2008 - Oct 2011)

Role in the research project: **Participant**

Funding Program: PRIN 2006

Funding Agency: MIUR (Ministry of Education, University, and Research)

Partners: Politecnico di Milano, University of Milan, University of Pavia, University of Bologna, University of Brescia

Grant: **95k€**

Participation to Research Projects Funded by Private Companies

Eni ITA-Read (Jul 2014 - Oct 2014)

Partners: Politecnico di Milano, Eni Exploration & Production

Contractor: Eni Exploration & Production

Contract Value: **70k€** (amount pertaining to the Department of Mathematics)

Radici Group - Ideas for Innovation (Apr 2013)

Partners: Politecnico di Milano, Moxoff

Contractor: Moxoff

Contract Value: **1k€** (amount pertaining to the Department of Mathematics)

Predictive Models for Supply and Demand Curves in Markets with Daily Variation

(Oct 2012 - Dec 2012)

Partners: Politecnico di Milano, Moxoff

Contractor: Moxoff

Contract Value: **5k€** (amount pertaining to the Department of Mathematics)

Eni Corporate Reputational Risk (Sep 2012 - Mar 2014)

Partners: Politecnico di Milano, Eni Exploration & Production

Contractor: Eni Exploration & Production

Contract Value: **30k€** (amount pertaining to the Department of Mathematics)

Eni Production Allocation (Jul 2012 - Jun 2014)

Partners: Politecnico di Milano, Eni Exploration & Production

Contractor: Eni Exploration & Production

Contract Value: **200k€** (amount pertaining to the Department of Mathematics)

Eni Production Allocation - Feasibility Study (Oct 2011 - Dec 2011)

Partners: Politecnico di Milano, Eni Exploration & Production

Contractor: Eni Exploration & Production

Contract Value: **20k€** (amount pertaining to the Department of Mathematics)

Progetto Edison GasRisk2 (Apr 2011 - Sep 2011)

Partners: Politecnico di Milano, Moxoff, Edison

Contractor: Edison

Contract Value: **20k€** (amount pertaining to the Department of Mathematics)

Eni Microseepage 2 (Jan 2011 - Dec 2011)

Partners: Politecnico di Milano, Eni Exploration & Production

Contractor: Eni Exploration & Production

Contract Value: **100k€** (amount pertaining to Politecnico di Milano)

Progetto Edison GasRisk (Nov 2010 - Mar 2011)

Partners: Politecnico di Milano, Moxoff, Edison

Contractor: Edison

Contract Value: **15k€** (amount pertaining to the Department of Mathematics)

Eni Microseepage (Oct 2008 - Sep 2010)

Partners: Politecnico di Milano, Eni Exploration & Production

Contractor: Eni Exploration & Production

Contract Value: **425k€** (amount pertaining to Politecnico di Milano)

Interruzioni prolungate o estese: Nuovi standard di qualità con indennizzi automatici in vigore dal terzo periodo di regolazione 2008-11 (Jan 2007 - Mar 2007)

Partners: Politecnico di Milano, Authority per l'Energia Elettrica e il Gas

Contractor: Authority per l'Energia Elettrica e il Gas

Contract Value: **50k€** (amount pertaining to the Department of Mathematics)

Definizione di una metodologia per l'attribuzione di un profilo di rischio utile per la valutazione dell'adeguatezza degli investimenti finanziari della clientela delle Banche del gruppo CRFirenze (Sep 2005 - Nov 2005)

Partners: Politecnico di Milano, Cassa di Risparmio di Firenze

Contractor: Infogroup

Contract Value: **10k€** (amount pertaining to the Department of Mathematics)

Aneurisk (Jan 2005 - Dec 2007)

Partners: Politecnico di Milano, Mario Negri Institute for Pharmacological Researches - Villa

Camozzi, Niguarda Ca'Granda Hospital - Milano, Ospedale Maggiore Policlinico - Milano

Contractor: Siemens Medical Solutions Italia and Fondazione Politecnico di Milano

Contract Value: **140k€** (amount pertaining to the Department of Mathematics)

**Advisor
for International Institutions**

International Atomic Energy Agency

Consultants Meeting on Developments of Power Reactor Information System, , September 17-19, 2013, Vienna (Austria).

Awards

Selected as **testimonial** of "Mathesia - The land where math creates innovation" (www.mathesia.com) (Dec 2014)

Personal award from Dept. of Mathematics - Politecnico di Milano (Jul 2014):
"Premio Giovani Ricercatori 2013".

Personal award from Fondazione CRUI and Enel Foundation (Jul 2013)
"Premio Energie per la Ricerca" (20 winners, 320 applicants)

Group award to the Hard Math Café Team (Nov 2012):
"Best Experience in Science Transfer - First Edition", 1st classified.
Mention for the best activity of the project Meet Me Tonight.

Front Cover of *Cardiovascular Engineering and Technology*, Vol. 3, Nr. 1, (Mar 2012),
for the manuscript: Passerini, T., Sangalli, L. M., Vantini, S., Piccinelli, M., Bacigaluppi, S., Antiga, L.,
Boccardi, E., Secchi, P., Veneziani, A. (2012): "An Integrated Statistical Investigation of Internal
Carotid Arteries of Patients Affected by Cerebral Aneurysms", *Cardiovascular Engineering and
Technology*, Vol. 3, pp. 26-40.

Front Cover of *Communications in Applied and Industrial Mathematics (CAIM)*, Vol.2, Nr. 2, (2011),
for the manuscript: Sangalli, L. M., Secchi, P., Vantini, S., Vitelli, V. (2010):
"Functional clustering and alignment methods with applications", *Communications in Applied and
Industrial Mathematics*, Vol.1, No.1, pp. 205-224.

Personal award from Politecnico di Milano (Oct 2010)
"5x1000 Junior 2010" (1st classified, 11 winners, 56 applicants) received.

Personal award by Dept. of Mathematics - Politecnico di Milano (Oct 2008):
"Premio Giovani Ricercatori 2008".

Fellowships

Post-doctoral Fellowship by Dept. of Mathematics - Politecnico di Milano (Apr 2008):
"Modelli e metodi per la classificazione e la regressione di dati funzionali (Models and Methods for
Classification and Regression of Functional Data)".

PhD Fellowship by Siemens Medical Solutions and Fondazione Politecnico di Milano (Mar 2005):
"Strumenti statistici e numerici per la valutazione dei rischi di rottura negli aneurismi cerebrali
(Statistical and Numerical Tools for Cerebral Aneurysm Rupture Risk Evaluation)"

Conference Organization

Member of the organizing committee of "IWFOs 2014 Third International Workshop on Functional
and Operatorial Statistics", June 19-21, 2014, Stresa (Italy).

Member of the organizing committee of "S.Co. 2013 Complex Models and Computational Intensive
Methods for Estimation and Prediction", September 9-11, 2013, Milan (Italy).

Member of the scientific and organizing committee of the Competition and Barcamp "Technology
Foresight and Statistics for the Future", September 12, 2013, Milan (Italy).

Member of the organizing committee of "S.Co. 2009 Complex Models and Computational Intensive
Methods for Estimation and Prediction", September 14-16, 2009, Milan (Italy).

Refereeing Activity

Reviewer for international journals: Journal of the Royal Statistical Society, Journal of Multivariate
Analysis, Computational Statistics and Data Analysis, Statistica Sinica, Communications in Statistics,
Pattern Recognition Letters, Biometrika, Advances in Data Analysis and Classification.

Referee for MSc theses in Mathematical Engineering and Energy Engineering.

Post-doc Fellow Supervision

A. Stamm, **Postdoc fellow** at Dept. of Mathematics - Politecnico di Milano:
Inference for Hidden Highdimensional Complex data.

A. Pini, **Postdoc fellow** at Dept. of Mathematics - Politecnico di Milano:
Permutational Inference for Functional Data.

P. Zanini, **Postdoc fellow** at Dept. of Mathematics - Politecnico di Milano:
Statistical methods for the analysis of the temporal evolution of spatially- located functional and
multivariate data.

M. Fiasché, **Postdoc fellow** at Dept. of Mathematics - Politecnico di Milano:
Deconvolution of geo-referenced vectorial and functional random signal.

Phd Thesis Supervision

Supervisor of A. Pini, PhD in Mathematical Models and Methods for Engineering XXVII cycle, Politecnico di Milano. Supervisor: S. Vantini.

Phd Thesis Co-supervision

Co-supervisor of R. Pascuzzo, PhD in Mathematical Models and Methods for Engineering XXX cycle, Politecnico di Milano. Supervisor: P. Secchi. Co-supervisor: S. Vantini.

Co-supervisor of A. Parodi, PhD in Mathematical Models and Methods for Engineering XXIX cycle, Politecnico di Milano. Supervisor: P. Secchi. Co-supervisor: L. M. Sangalli, S. Vantini.

Co-supervisor of M. Cremona, PhD in Mathematical Models and Methods for Engineering XXVIII cycle, Politecnico di Milano. Supervisor: P. Secchi. Co-supervisor: L. M. Sangalli, S. Vantini.

Co-supervisor of P. Zanini: "Blind Source Separation methods for high-dimensional, massive, and complex data", PhD in Mathematical Models and Methods for Engineering XXVI cycle, Politecnico di Milano. Supervisor: P. Secchi. Co-supervisor: S. Vantini.

Co-supervisor of V. Vitelli: "Classification of Functional Data in the presence of Spatial Dependence Methods, Algorithms and Case Studies", PhD in Mathematical Models and Methods for Engineering XXIV cycle, Politecnico di Milano. Supervisor: P. Secchi. Co-supervisor: S. Vantini.

MSc Thesis Supervision and Co-supervision

Supervisor and Co-supervisor of 23 MSc theses in Mathematical Engineering (Dalla Rosa M., Stamm A., Boneschi A., Vecchio C., Juramy M., Antonini M., Cardazzi C., Bernardi M., Binda R., Patriarca M., Riabiz M., Belloni C., Chinello F., Ferrara L., Ghiazza F., Satta M., Giorgio G.) and in Management Engineering (Cova A., Sert S., Cazzaniga N., d'Ettola S., Pozzi D., Leonardi V.) at Politecnico di Milano.

Stage Academic Tutoring

Academic tutor of 3 stages in Mathematical Engineering

Juramy M., Mathematical Engineering (TIME program), Stage at Soladis, Lyon (France)

Crippa V., Mathematical Engineering (TIME program), Stage at Total, Lyon (France)

Facchetti L., Mathematical Engineering, Stage at Festo, Milan (Italy)

Teaching (PhD Courses)

Course name: "Advanced Statistics: Functional Data Analysis"

Phd course of the Graduate School of Politecnico di Milano.

AcYrs: 2014/15.

Course name: "Statistics and Computing: to R and beyond"

Phd course of the Graduate School of Politecnico di Milano.

AcYrs: 2014/15.

Course name: "Vulnerability, Risk and Resilience of Complex Systems"

Phd course of the Graduate School of Politecnico di Milano, Superlec, Ecole Centrale Paris.

AcYrs: 2013/14.

Course name: "Risk and Uncertainty Modelling"

Phd course of the Graduate School of Politecnico di Milano, Superlec, Ecole Centrale Paris.

AcYrs: 2012/13.

Course name: "Intelligent Transport Systems for Sustainable Mobility"

Phd course of the Graduate School of Politecnico di Milano,

AcYrs: 2012/13.

Course name: "Functional Data Analysis",

Tutorial at Workshop on New Perspectives in FDA, Seconda Università degli Studi di Napoli, 2012.

Teaching (Postgraduate Master Courses)

Course name: "Basic Statistics",

Post-graduate Master in Analytics & Business Intelligence, CEFRIEL,

Editions: 2015.

Course name: "Probability and Stochastic Processes for Finance",
Post-graduate master Corso di Alta Formazione in Finanza Quantitativa, MIP - School of Management
Politecnico di Milano,
Editions: 2010, 2011, 2012, 2013, 2014, 2015.

Course name: "Introduction to Statistics and Data Analysis",
Post-graduate master Corso di Alta Formazione Energy Finance, MIP - School of Management
Politecnico di Milano,
Editions: 2010, 2011, 2012, 2013, 2014.

Teaching (MSc Courses)

Course name: "Applied Statistics" exercise class,
Master Degree in Mathematical Engineering, Politecnico di Milano,
AcYrs: 2005/06, 2006/07, 2007/08, 2008/09, 2009/10, 2010/11, 2011/12, 2012/13, 2013/14.

Course name: "Applied Statistics" exercise class,
Master Degree in Management Engineering, Politecnico di Milano,
AcYrs: 2010/11.

Course name: "Bayesian Statistics" exercise class,
Master Degree in Mathematical Engineering, Politecnico di Milano,
AcYrs: 2009/10.

Teaching (Bachelor Courses)

Course name: "Probability and Mathematical Statistics",
Bachelor in Management Engineering, Politecnico di Milano,
AcYrs: 2012/13, 2013/14, 2014/15.

Course name: "Mathematical Statistics A" exercise class,
Bachelor in Energy Engineering, Politecnico di Milano,
AcYrs: 2005/06, 2006/07, 2007/08.

Course name: "Mathematical Statistics A" laboratory class,
Bachelor in Energy Engineering, Politecnico di Milano,
AcYrs: 2005/06, 2006/07, 2007/08.

Course name: "Statistics" laboratory tutoring,
Bachelor in Mathematical Engineering and Bachelor Physical Engineering, Politecnico di Milano,
AcYrs: 2006/07, 2007/08.

Educational Activity

Meet me Tonight - Notte dei Ricercatori 2013, Hard Math Cafè, Milano.

Meet me Tonight - Notte dei Ricercatori 2012, Hard Math Cafè, Milano.

Summer School - Politecnico di Milano, 2012, Politecnico di Milano

They talk about me...

Claudia Cervini (2014):
"La reputazione mostra il conto", *Italiaoggi*, July 22, 2014.

Pier Luigi Vercesi (2014):
"Editoriale - Tutto virtuale, tranne i guai", *Corriere della Sera - Sette*, July 11, 2014.

Giampiero Rossi (2014):
"Amato: il web come il treno «Rischi e grandi opportunità»", *Corriere della Sera*, July 4, 2014.

Beppe Severgnini (2014):
La vita è un viaggio, Chapter 6 "Inseguimento", Rizzoli, Milano.

Alessandra Dal Monte (2013):
"Esperimenti e giochi, la scienza per le famiglie. Oltre settemila persone alla notte dei ricercatori",
Corriere della Sera, September 28, 2013

Beppe Severgnini (2009):
"Tipi interessanti che ho incontrato", *Embedded@Mit - Corriere della Sera*, November 23, 2009.

Computer skills and competences

Operating systems Linux, Macintosh, Windows
 Statistical software Excel, R, S-plus
 Programming languages C, C++, LaTeX, matlab, R, S-plus

Language skills and competences

Mother tongue(s)	Italian				Writing
	Understanding		Speaking		
Other language(s)	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2
French	A2	B1	A2	A2	A2

(*) Common European Framework of Reference for Languages: A1 (min), A2, B1, B2, C1, C2 (max).

Declarations

IL PRESENTE DOCUMENTO E' REDATTO AI SENSI DEGLI ARTT. 46 E 47 DEL D.P.R. 28.12.2000, N. 445 (DICHIARAZIONI SOSTITUTIVE DI CERTIFICAZIONI E DELL'ATTO DI NOTORIETA')

*Il sottoscritto VANTINI SIMONE
 codice fiscale VNTSMN79B24F205Q
 nata a MILANO (MI) il 24/02/1979
 residente a MILANO (MI) in VIALE DELL'INNOVAZIONE n. 22, c.a.p. 20126
 telefono: 347 7594879
 e-mail: simone.vantini@polimi.it*

Consapevole delle sanzioni penali, nel caso di dichiarazioni non veritiere, di formazione o uso atti falsi richiamate dall'art. 76 3 del D.P.R. 445 del 28 dicembre 2000, nonché della sanzione ulteriore prevista dall'art. 75 4 del citato D.P.R. 445 del 28 dicembre 2000, consistente nella decadenza dai benefici eventualmente conseguenti al provvedimento emanato sulla base della dichiarazione non veritiera, D I C H I A R A di possedere i titoli scientifici e didattici dettagliati nel presente documento.

Luogo e data : Milano, 30 Gennaio 2015

Il dichiarante: Simone Vantini

Il sottoscritto dichiara inoltre di essere informato che, ai sensi e per gli effetti di cui all'art. 13 D.Lgs 30.06.2003 n. 196, i dati personali forniti dai candidati saranno raccolti presso la Divisione Attività Istituzionali/ Ufficio Concorsi e trattati per le finalità di gestione della procedura di valutazione comparativa e dell'eventuale procedimento di assunzione in servizio.

Luogo e data : Milano, 30 Luglio 2014

Il dichiarante: Simone Vantini

Simone Vantini