Silvia Metelli

University of Paris
CRESS, INSERM, INRA

silvia.metelli@parisdescartes.fr
Phone: +33 (0)656809829
My personal website, My professional page, My GitHub

LANGUAGES

Italian: native speaker, **English**: fluent, **French**: working knowledge

RESEARCH INTERESTS

A broad interest in dynamic network analysis - with applications spanning from healthcare to cybersecurity - network meta-analysis and dynamic treatment regimes for personalised medicine. Specific interests include multivariate mixed models, Bayesian nonparametric latent feature models and clustering techniques. I am also interested in visualisation techniques for complex data.

CURRENT POSITION

Assistant Professor of Statistics (fixed term), University of Paris, CRESS, INSERM, INRA, Nov 2019 - present

PREVIOUS POSITIONS

Postdoctoral Research Associate, The Alan Turing Institute & Imperial College London, March 2018 - Oct 2019, worked under the Grand Challenge *Monitoring complex systems with rare high-consequence events*

External Consultant, Jinn Capital, London, Dec 2016 - Sept 2017, worked on Machine Learning models for time-series data

EDUCATION

Ph.D, Statistics (award date: 1 October 2018)
Department of Mathematics - Statistics Section,
Imperial College London, 2014 - 2018,
Supervisor: Professor Nicholas A. Heard

MRes Degree, Mathematical Science
Distinction
Imperial College London, 2013 - 2014

Short Advanced Course, Survival Analysis
Statistical Science PhD School, University of Padua, June 2012

Master of Science, Statistical Sciences
Thesis: Bayesian Estimation with INLA for logistic multilevel models,
110/110 cum laude - publication recommended
University of Florence, 2010 - 2012

Bachelor of Science, Statistics
Thesis: Estimation methods for discrete multilevel models,
110/110 cum laude
University of Florence, 2007 - 2010

VISITING EXPERIENCES

Visiting PhD student — Los Alamos National Laboratory, June 2015-Aug 2015
Advanced Computing Solutions - PO Office
Los Alamos, New Mexico, US

TEACHING

Teaching Assistant, Imperial College London, Oct 2014 - 2017

Teaching assistant for the following courses: *Probability & Statistics I, Probability & Statistics II, Statistical Modelling I, Statistical Modelling II, Python, MATLAB.*

Teaching Lecturer, École Normale Supérieure Paris-Saclay, March 2021

Lecturing at the Biostatisics course of M2 MVA (Mathmatiques/Vision Apprentissage). Topics covered: statistics for dynamic treatment regimes, just-in-time adaptive interventions

SUPERVISION OF STUDENTS

June 2019 - Sept 2019: Supervision of a UROP (Undergraduate Research Opportunity Programme) student, BSc in Mathematics, Imperial College London.
Project: Random forests for classification of computer network data.

Feb 2021 - present: Supervision of a master student, Master in Public Health, University of Paris.
Project: Clinical prediction models for routinely collected intensive care unit data.

PUBLICATIONS

T. Evrenoglou, S. Metelli and A. Chaimani. Introduction to meta-analysis. In: Piantadosi S., Meinert C.L. (eds) Principles and Practice of Clinical Trials. Springer, Cham. 2021.

S. Metelli and A. Chaimani. Challenges in meta-analyses with observational studies. *Evidence-Based Mental Health*, 23 (2), 83-87, 2020.

S. Metelli and N.A. Heard. On Bayesian New Edge Prediction and Anomaly Detection in Computer Networks. *The Annals of Applied Statistics*, 13 (4), 2586-2610, 2019.

S. Claudiani, S. Metelli, R. Kamvar, R. Szydlo, A. Khan et al. Introducing a Predictive Score for Successful Treatment Free Remission in Chronic Myeloid Leukemia (CML). *Blood*, 134, 26, 2019.

S. Metelli. New Edge Activity and Anomaly Detection in a Large Computer Network. *PhD Thesis*, Imperial College London, 2018.

S. Metelli and N.A. Heard. Model-based clustering and new edge modelling in large computer networks. *Proceedings of the IEEE Intelligence and Security Informatics Conference (ISI)*, 91-96, 2016.

L. Grilli, S. Metelli* and C. Rampichini. Bayesian estimation with integrated nested Laplace approximation for binary logit mixed models. *Journal of Statistical Computation and Simulation*, 85 (13), 2718-2726, 2015. (*co-first author)

S. Metelli and N.A. Heard. Modelling new edge formation in a computer network through Bayesian variable selection. *Proceedings of the IEEE Joint Intelligence and Security Informatics Conference (JISIC)*, 272-275, 2014.

SUBMITTED and WORKING PAPERS

S. Claudiani, S. Metelli, R. Kamvar, R. Szydlo *et al.* A Predictive Score for Successful Treatment Free Remission in Chronic Myeloid Leukemia (CML). *Submitted (extended version).*

S. Metelli, D. Mavridis, A. Chaimani. Bayesian model-based outlier detection in network meta-analysis.

S. Metelli, A. Chaimani. An interactive tool for network meta-analysis visualization. *Working Paper*.

S. Metelli *et al.* Using dynamic networks approaches for the study of temporal multi-morbidity trajectories. *Working Paper*.

CONFERENCES and WORKSHOPS

2020 Cochrane Colloquium, Oct 2020, Toronto, CA (accepted for oral presentation, cancelled for Covid-19)
2020 International Society Conference of Clinical Biostatistics, *ISCB41*, Aug. 23-27, Krakow, PL
2018 Computational and Methodological Statistics, *CMStatistics*, Dec. 14-16, Pisa, IT
2017 Statistical Data Science Workshop, July 3-5, London, UK
2017 Data Science for Cyber-Security, Sept. 25-27, London, UK
2016 Quick Fire talks, Imperial College London, Nov. 4, London, UK
2016 IEEE Intelligence and Security Informatics Conference (ISI), Sept. 28-30, Tucson, AZ
2015 Quick Fire talks, Imperial College London, Oct. 30, London, UK
2015 Dynamic Networks and Cyber Security Workshop, June 22-24, Bristol, UK
2014 IEEE Joint Intelligence and Security Informatics Conference, Sept. 24-26, The Hague, NL
2013 International Workshop on Statistical Modelling, IWSM, July 7-11, Palermo, IT
2013 International Workshop on Simulation, May 21-25, Rimini, IT

DSG & DATA CHALLENGES

2018 The Alan Turing Institute Data Study Group, Dec. 10-14, London, UK

INVITED TALKS

2019 2nd IMA and OR Society Conference on Mathematics of Operational Research, Birmingham, UK
2019 Centre of Research in Epidemiology and Statistics Sorbonne Paris Cite, Paris, FR
2019 Data Science Institute, Imperial College London, London, UK

AWARDS

Seal of Excellence - European Commission certificate of excellence for the grant "Dynamic comparative effectiveness research", submitted under the Marie Skołodowska-Curie actions call H2020-MSCA-IF-2019
Statistical Data Science Award - Best poster award, Statistical Data Science UK 2017
Graduation Prize Villa Favard - Most original thesis of the years 2011-2012, University of Florence
Merit and Productivity-based Award - University of Florence 2010-2012

GRANTS

Marie Skołodowska-Curie Individual Fellowship 2020, European Commission
(€ 184 707.84), starting date: Nov 2021
IEEE-ISI Student Travel Grant - Mobility grant IEEE-ISI 2016 ($500)
Santander Mobility Grant - Travel grant for the year 2014-15 (£1000)

FUNDING

Full doctoral scholarship - Four year studentship, Imperial College London, Dept. Mathematics
Visiting PhD scholarship - Advanced Computing Solutions, Los Alamos National Laboratory, NM

OTHER ACTIVITIES

Reviewer for Technometrics, IEEE/ACM Transactions on Networking, Frontiers in Public Health & more

TECHNICAL SKILLS

Python, R: Extensive experience (in order of proficiency)
Data Visualisation: Gephi, Dash, Cytoscape
Applications: LaTeX, UNIX, Microsoft Office
Distributed computing: Apache Hadoop
Operating Systems: Experience with Linux, Mac and Microsoft Windows