

# Silvia Metelli

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## LANGUAGES

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

## RESEARCH INTERESTS

A broad interest in dynamic network analysis - with applications spanning from epidemiology to cyber-security - network meta-analysis and dynamic treatment regimes for personalised medicine. Specific interests include multivariate mixed models, nonparametric latent feature models, clustering and dimensionality-reduction techniques.

## CURRENT POSITION

**Assistant Professor of Biostatistics** (fixed term), University of Paris,  
CRESS, INSERM, INRA, F-75004 Paris.

## EMPLOYMENT

**Post-doctoral Research Associate**, The Alan Turing Institute & Imperial College London,  
March 2018 - Oct 2019

**External Consultant**, Jinn Capital, London, Dec 2016 - Sept 2017

## 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*.

## SUPERVISION OF STUDENTS

June 2019 - Aug 2019, Supervision of a UROP (Undergraduate Research Opportunity Programme) student, 2<sup>nd</sup> year, BSc in Mathematics, Department of Mathematics, Imperial College London. Project: Random forests for classification of computer network data.

## PUBLICATIONS

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, The Journal of the American Society of Hematology*, 134, 26-26, 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. *2016 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.

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

## SUBMITTED and WORKING PAPERS

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

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

S. Metelli and N.A. Heard. Activity monitoring with topic modelling for cyber-security data. *Working Paper*.

## CONFERENCES and WORKSHOPS

2020 *International Society Conference of Clinical Biostatistics, ISCB41*, Aug. 23-27, Krakow, PL

2018 *Computational and Methodological Statistics, CMStatistics*, Dec. 14-16, Pisa, IT

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

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

## INVITED TALKS

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

## AWARDS and FUNDINGS

**Seal of Excellence** - European Commission certificate for the project "Dynamic comparative effectiveness research", submitted under the Horizon 2020s Marie Skłodowska-Curie actions call H2020-MSCA-IF-2019  
**Statistical Data Science Award** - Best poster award, Statistical Data Science UK 2017  
**IEEE-ISI Studentship** - Mobility grant IEEE-ISI 2016 conference  
**Santander Mobility Award** - Travel grant for the year 2014-15  
**Maths Department (IC) Studentship** - Four year studentship (stipend and fees)  
**Villa Favard Award** - Most original thesis of the year 2011-2012  
**University of Florence**- Outstanding achievements scholarship 2010-2012

## TECHNICAL SKILLS

**R, Python:** Extensive experience  
**Programming:** R, Python, STATA and MATLAB  
**Data Visualisation:** Gephi, Dash, Cytoscape  
**Applications:** LaTeX, UNIX, Apache Hadoop, Microsoft Office  
**Operating Systems:** Experience with Linux, Mac and Microsoft Windows