# Curriculum Vitae

# Maurizio Filippone

- Maître de Conférence with EURECOM, Sophia Antipolis, France
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# Education

- 2008 PhD in Computer Science University of Genova Thesis title: Central Clustering in Kernel-Induced Spaces Thesis topics: kernel methods for clustering, spectral clustering, relational clustering, fuzzy clustering.
- 2004 Master's Degree in Physics (full marks: 110/110) University of Genova Thesis title: Ensemble methods for time series analysis and forecasting Thesis topics: Non linear systems, regression, ensemble of learning machines, signal processing.

### **Research Experience**

- From 08-2015 Maître de Conférence EURECOM, Sophia Antipolis, France Keywords: Data analytics, Bayesian inference, Nonparametric modeling
- From 09-2011 to 08-2015 *Lecturer* School of Computing Science - University of Glasgow Keywords: Bayesian inference, Gaussian Processes, Markov chain Monte Carlo
- From 01-2010 to 08-2011 Research Associate (PI: Prof. Mark Girolami) Department of Statistical Science - University College London (2011) School of Computing Science - University of Glasgow (2010) Keywords: Bayesian inference, Gaussian Processes, Markov chain Monte Carlo
- From 03-2008 to 12-2009 *Research Associate* (PI: Dr G. Sanguinetti) Department of Computer Science - University of Sheffield Keywords: novelty detection, statistical testing, Bayesian inference
- From 03-2007 to 10-2007 *Research Scholar* (PIs: Prof. D. Barbarà and Prof. C. Domeniconi) Department of Information and Software Engineering - George Mason University Keywords: outlier detection, density estimation, relational clustering

# **Research Grants**

• Co-PI: Computational inference of biopathway dynamics and structures (£340K) with (PI) D. Husmeier and (Co-PI) S. Rogers - EPSRC research grant (2014 - 2017)

## **Professional Activities**

- Associate Editor for Pattern Recognition (Nov 2012 present)
- Associate Editor for the IEEE Transactions on Neural Networks and Learning Systems (2013 present)
- Co-chair of Track Pattern recognition and Machine Learning for ICPR 2016
- Technical Program Chair for IJCNN 2014

#### Awards

• International Association of Pattern Recognition best paper award:

M. Filippone, F. Camastra, F. Masulli, and S. Rovetta. A survey of kernel and spectral methods for clustering. *Pattern Recognition*, 41(1):176-190, January 2008.

#### **Selected Publications**

- M. Filippone and R. Engler. Enabling scalable stochastic gradient-based inference for Gaussian processes by employing the Unbiased LInear System SolvEr (ULISSE). In *Proceedings of the 32nd International Conference on Machine Learning, ICML 2015, Lille, France, July 6-11, 2015, 2015.*
- M. Filippone. Bayesian inference for Gaussian process classifiers with annealing and pseudo-marginal MCMC. In 22nd International Conference on Pattern Recognition, ICPR 2014, Stockholm, Sweden, August 24-28, 2014, pages 614-619. IEEE, 2014.
- M. Filippone and M. Girolami. Pseudo-marginal Bayesian inference for Gaussian processes. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 36(11):2214-2226, 2014.
- F. Dondelinger, M. Filippone, S. Rogers, and D. Husmeier. ODE parameter inference using adaptive gradient matching with Gaussian processes. In *AISTATS*, 2013.
- M. Filippone, M. Zhong, and M. Girolami. A comparative evaluation of stochastic-based inference methods for Gaussian process models. *Machine Learning*, 93(1):93-114, 2013.
- M. Filippone, A. F. Marquand, C. R. V. Blain, S. C. R. Williams, J. Mourão-Miranda, and M. Girolami. Probabilistic prediction of neurological disorders with a statistical assessment of neuroimaging data modalities. *Annals of Applied Statistics*, 6(4):1883-1905, 2012.
- M. Filippone and G. Sanguinetti. Approximate inference of the bandwidth in multivariate kernel density estimation. *Computational Statistics & Data Analysis*, 55(12):3104-3122, 2011.
- M. Filippone, F. Masulli, and S. Rovetta. Applying the possibilistic c-means algorithm in kernelinduced spaces. *IEEE Transactions on Fuzzy Systems*, 18(3):572-584, June 2010.
- M. Filippone and G. Sanguinetti. Information theoretic novelty detection. *Pattern Recognition*, 43(3):805-814, March 2010.
- M. Filippone. Dealing with non-metric dissimilarities in fuzzy central clustering algorithms. *International Journal of Approximate Reasoning*, 50(2):363-384, February 2009.
- M. Filippone, F. Camastra, F. Masulli, and S. Rovetta. A survey of kernel and spectral methods for clustering. *Pattern Recognition*, 41(1):176-190, January 2008.

#### **Referee Activity**

- Funding bodies: Leverhulme Trust (£100K+),
- Journals: Pattern Recognition (30+), Pattern Recognition Letters (20+), IEEE Transactions on Neural Networks (10+), IEEE Transactions on Signal Processing (5+), IEEE Signal Processing Letters, Computational Statistics & Data Analysis, IEEE Transactions on Pattern Analysis and Machine Intelligence, Journal of Machine Learning Research, Bioinformatics, Signal Processing, Computational Intelligence, Neural Processing Letters, Soft Computing.
- Conferences: ICML 2015, ICPRAM 2015, ICANN 2015, NIPS 2014, ICPRAM 2014, AISTATS 2013, ICANN 2013, ICPRAM 2013, PRIB 2013, ICPRAM 2012, PRIB 2010, IJCNN 2010, PRIB 2009, IJCNN 2009, WCCI 2008, ICDM 2007, IJCNN 2007, IJCNN 2006.

## **Keynote Presentations**

• 5 Dec 2013, Conference on Electronics, Telecommunications and Computers 2013, Lisbon, Portugal.

## Selected Presentations

- 14 May 2015, University of Oxford 23 Apr 2015, University of Sheffield Unbiased computations for MCMC-based inference of Gaussian process covariance parameters.
- 26 Aug 2014, ICPR 2014, Stockholm, Sweden Bayesian Inference for Gaussian Process Classifiers with Annealing and Pseudo-Marginal MCMC.
- 16 Oct 2014, Bristol University 20 May 2014, University of Edinburgh 30 Apr 2014, Columbia University 9 Dec 2014, UTIA Prague Pseudo-Marginal Bayesian Inference for Gaussian Processes.
- 25 Sep 2013, ECML/PKDD 2013, Prague, Czech Republic A Comparative Evaluation of Stochasticbased Inference Methods for Gaussian Process Models.
- 30 May 2012, The Second Workshop on Bayesian Inference for Latent Gaussian Models with Applications, Trondheim, Norway On the Fully Bayesian Treatment of Latent Gaussian Models using Stochastic Simulations.
- 9 Jun 2011, Italian Statistical Society Conference, Bologna, Italy Bayesian inference in latent variable models and applications.
- 13 Oct 2010, Royal Statistical Society Discussion of the paper "Riemann manifold Langevin and Hamiltonian Monte Carlo methods" by M. Girolami and B. Calderhead.
- 14 Jul, 2009, Columbia University 11 Nov 2009, University of Edinburgh Information Theoretic Novelty Detection.

## **Teaching Activity**

- Fall 2014 Lecturer (30 hours) Algorithmic Foundations (Year 2) University of Glasgow
- Fall 2012, 2013, 2014 Lecturer (30 hours) Artificial Intelligence (Year 4) University of Glasgow
- Spring 2013, 2014, 2015 Lecturer (30 hours) Machine Learning (Year 4) University of Glasgow