Curriculum Vitae

Maurizio Filippone

- *Lecturer* with the School of Computing Science, University of Glasgow.
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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 09-2011 to present - *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

Professional Activities

- *Associate editor* for Pattern Recognition
- *Associate editor* for the IEEE Transactions on Neural Networks and Learning Systems

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.

  Manuscripts published in volume 41 (year 2008) were judged by the Editor-in-Chief and the members of the Editorial and Advisory Boards of the journal based on the following criteria: originality of the contribution, presentation and exposition of the manuscript, and citations by other researchers.

Selected Publications

- 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.
- F. Dondelinger, M. Filippone, S. Rogers, and D. Husmeier. ODE parameter inference using adaptive gradient matching with Gaussian processes. In *AISTATS*, 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 and G. Sanguinetti. A perturbative approach to novelty detection in autoregressive models. *IEEE Transactions on Signal Processing*, 59(3):1027-1036, 2011.
- L. Mohamed, B. Calderhead, M. Filippone, M. Christie, and M. Girolami. Population MCMC methods for history matching and uncertainty quantification. *Computational Geosciences*. to appear.
- M. Filippone, F. Masulli, and S. Rovetta. Applying the possibilistic c-means algorithm in kernel-induced 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.
- F. Camastra and M. Filippone. A comparative evaluation of nonlinear dynamics methods for time series prediction. *Neural Computing and Applications*, 18(8):1021-1029, November 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.
- M. Filippone, F. Masulli, S. Rovetta, S. Mitra, and H. Banka. Possibilistic approach to biclustering: An application to oligonucleotide microarray data analysis. In C. Priami, editor, *CMSB*, volume 4210 of *Lecture Notes in Computer Science*, pages 312-322. Springer, 2006.

Teaching Activity

- Fall 2012 and 2013 - Lecturer (30 hours) Artificial Intelligence (Level 4) - University of Glasgow
- Spring 2013 and 2014 - Lecturer (30 hours) Machine Learning (Level 4/M) - University of Glasgow

Selected Presentations

- 25 September 2013, ECML/PKDD 2013 - Prague, Czech Republic - *A Comparative Evaluation of Stochastic-based 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 June 2011, Italian Statistical Society Conference - Bologna, Italy - *Bayesian inference in latent variable models and applications.*
- 13 October 2010, Royal Statistical Society - *Discussion of the paper "Riemann manifold Langevin and Hamiltonian Monte Carlo methods" by M. Girolami and B. Calderhead.*
- 11 November 2009, University of Edinburgh - 14 July, 2009, Columbia University - 21 January, 2009, University of Glasgow - *Information Theoretic Novelty Detection.*