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.

Relevant Fellowships

- From 01-2010 to 08-2011: Department of Statistical Science - University College London (2010 with the Department of Computing Science - University of Glasgow)
  Grant: The Synthesis of Probabilistic Prediction & Mechanistic Modelling within a Computational & Systems Biology Context
  PI: Prof. Mark Girolami

- From 03-2008 to 12-2009: Department of Computer Science - University of Sheffield
  Grant: ALMS: Advanced Lifestyle Monitoring Systems
  Keywords: novelty detection, statistical testing, Bayesian inference in data modeling.
  PI: Dr G. Sanguinetti

- From 03-2007 to 10-2007: Department of Information and Software Engineering - George Mason University
  Grant: Detecting Suspicious Behavior in Reconnaissance Images
  Keywords: outlier detection, density estimation, relational clustering.
  PI, co-PI: Prof. D. Barbarà and Prof. C. Domeniconi

Teaching Activity

- 2008 - Lab assistant (2 hours) Bioinformatics - University of Sheffield

- 2004-2005 - Lab assistant (52 hours) Neural Networks and Soft Computing - University of Genova

Awards

- Best paper published in 2008 in the journal Pattern Recognition: **A survey of kernel and spectral methods for clustering**. *Pattern Recognition*, 41(1):176-190, January 2008.

Selected Publications

- M. Filippone, G. Sanguinetti. **Approximate inference of the bandwidth in multivariate kernel density estimation**. *Computational Statistics & Data Analysis*, 55(12):3104-3122, 2011.

- M. Filippone, G. Sanguinetti. **A Perturbative Approach to Novelty Detection in Autoregressive Models**. *IEEE Transactions on Signal Processing*, 59(3):1027-1036, March 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, F. Masulli, and S. Rovetta. **Simulated annealing for supervised gene selection**. *Soft Computing*. to appear.

- M. Filippone, G. Sanguinetti. **Information theoretic novelty detection**. *Pattern Recognition*, 43(3):805-814, March 2010.

- 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. **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.

- D. Barbará, C. Domeniconi, Z. Duric, M. Filippone, E. Lawson, and R. Mansfield. **Detecting suspicious behavior in surveillance images**. *In ICDM Workshops*, pages 891-900. IEEE Computer Society, 2008.

- M. Filippone, F. Masulli, S. Rovetta, S. Mitra, and H. Banka. **Possibilistic approach to biclustering: An application to oligonucleotide microarray data analysis**. In *Computational Methods in Systems Biology*, vol 4210 of *Lecture Notes in Computer Science*, 312-322. 2006.

Referee Activity for International Journals

Pattern Recognition (19), IEEE Transactions on Neural Networks (11), Pattern Recognition Letters (9), IEEE Transactions on Signal Processing (4), IEEE Signal Processing Letters (2), IEEE Transactions on Pattern Analysis and Machine Intelligence (1), Computational Intelligence (1), Neural Processing Letters (1), IEEE Transactions on Parallel and Distributed Systems (1), Soft Computing (1),

Relevant Talks

- 8 February 2011, University College London - *Calibration of Oil Reservoir Simulation Codes.*

- 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.*

- 3 March 2008, University of Milano - *Central Clustering in Kernel-Induced Spaces.*

- 27 September 2007, George Mason University - *Kernel and Spectral Methods for Clustering.*

Main Conferences Attended

ICPR 2010, ISBA 2010, NIPS 2008, ICDM 2008, IJCNN 2007