Curriculum Vitae

Maurizio Filippone

- *AXA Chair of Computational Statistics & Maître de Conférence* at EURECOM, Sophia Antipolis, France
- Email: `maurizio.filippone@eurecom.fr`
- Web Page: `http://www.eurecom.fr/~filippon`

Education

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

Research Experience

- From Fall 2015 to present - *Maître de Conférence*
  EURECOM, Sophia Antipolis, France
  Keywords: Bayesian inference, Nonparametric modeling, Scalable inference
- From Fall 2011 to Fall 2015 - *Lecturer*
  School of Computing Science - University of Glasgow
  Keywords: Bayesian inference, Gaussian Processes, Markov chain Monte Carlo
- From Fall 2010 to Fall 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 Spring 2008 to Fall 2009 - *Research Associate* (PI: Dr G. Sanguinetti)
  Department of Computer Science - University of Sheffield
  Keywords: novelty detection, statistical testing, Bayesian inference
- From Spring 2007 to Fall 2007 - *Research Scholar* (PIs: Profs. D. Barbarà, 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 (end 2012 - end 2016)
- *Associate Editor* for the IEEE Transactions on Neural Networks and Learning Systems (2013 - end 2016)
- *Technical Program Chair* for IJCNN 2014

Research Grants

- AXA Chair of Computational Statistics: *New Computational Approaches to Risk Modeling* (600K€), 2016–2023, AXA Research Fund
- Co-PI: *Computational inference of biopathway dynamics and structures* (£340K), 2014–2017, (PI) D. Husmeier and (Co-PI) S. Rogers - EPSRC (UK) research grant

Selected Publications

- K. Cutajar, E. V. Bonilla, P. Michiardi, and M. Filippone. Random feature expansions for deep Gaussian processes. In *Proceedings of the 34th International Conference on Machine Learning, ICML 2017, Sydney, Australia, August 6-11, 2017*, 2017.
- K. Cutajar, M. A. Osborne, J. P. Cunningham, and M. Filippone. Preconditioning kernel matrices. In *Proceedings of the 33rd International Conference on Machine Learning, ICML 2016, New York City, USA, June 19-24, 2016*, 2016.
- J. Hensman, A. G. de G. Matthews, M. Filippone, and Z. Ghahramani. MCMC for variationally sparse Gaussian processes. In *Advances in Neural Information Processing Systems 28: Annual Conference on Neural Information Processing Systems 2015, December 7-12 2015, Montreal, Quebec, Canada*, 2015.
- 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 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, 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, F. Camastra, F. Masulli, and S. Rovetta. A survey of kernel and spectral methods for clustering. *Pattern Recognition*, 41(1):176-190, January 2008.

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.

Media Coverage

- *MIT Technology Review website* - 20 October 2015 based on "Monte Carlo strength evaluation: Fast and reliable password checking"
- *New Scientist website* - 03 March 2012 based on "Predicting the conflict level in television political debates: an approach based on crowdsourcing, nonverbal communication and Gaussian processes"

Keynote Presentations

- 5 Dec 2013, Conference on Electronics, Telecommunications and Computers 2013, Lisbon, Portugal.
- 9 Jun 2011, Italian Statistical Society Conference, Bologna, Italy.

Referee Activity

- Funding bodies: Leverhulme Trust (£100K+)
- Journals: IEEE Transactions on Pattern Analysis and Machine Intelligence, Journal of Machine Learning Research, Bioinformatics, Signal Processing, Pattern Recognition, Pattern Recognition Letters, IEEE Transactions on Neural Networks, IEEE Transactions on Signal Processing, IEEE Signal Processing Letters, Computational Statistics & Data Analysis, Computational Intelligence, Neural Processing Letters
- Conferences: NIPS (2014–2017), ICML (2015–2017), ECML (2016–2017), AISTATS (2012, 2013, 2016, 2017), IJCAI (2016), IJCNN (2006–2010, 2015), ICPRAM (2012–2015), ICANN (2014).

Selected Conference Presentations

- 9 Jul 2015, ICML 2015, Lille, France
- 26 Aug 2014, ICPR 2014, Stockholm, Sweden
- 25 Sep 2013, ECML/PKDD 2013, Prague, Czech Republic
- 30 May 2012, LGM2012, NTNU, Trondheim, Norway

Selected Invited Presentations

- Google Research NYC (2017), Yandex (2017), University of Oxford (2015), University of Sheffield (2015), Columbia University (2014, 2009), Bristol University (2014), University of Edinburgh (2014, 2009), UTIA Prague (2014), University of Turin (2014, 2012)

Teaching Activity

- Spring 2016–2017 - Lecturer (42 h) Advanced Statistical Inference (MSc) - EURECOM
- Spring 2013–2015 - Lecturer (30 h) Machine Learning (Year 4) - University of Glasgow
- Fall 2012–2014 - Lecturer (30 h) Artificial Intelligence (Year 4) - University of Glasgow
- Fall 2014 - Lecturer (30 h) Algorithmic Foundations (Year 2) - University of Glasgow

Post-Doc Supervision

- Dr Mu Niu: School of Mathematics and Statistics, University of Glasgow. Fall 2014 - Fall 2017
- Dr Roberto Visintainer: Fondazione Bruno Kessler, Trento. Visiting: Fall 2015 - Spring 2016

Ph.D. Supervision

- Xiaoyu Xiong: School of Computing Science, University of Glasgow. Fall 2013 - Spring 2017
- Umberto Noè: School of Mathematics and Statistics, University of Glasgow. Fall 2014 - Fall 2017
- Kurt Cutajar: Dept. of Data Science, EURECOM. Fall 2015 - Fall 2018
- Remi Domingues: Dept. of Data Science, EURECOM and Amadeus. Spring 2016 - Spring 2019

Ph.D. Committee

- Daniel Trejo Baños: School of Informatics, University of Edinburgh. Fall 2015
- Anna Polychroniou: School of Computing Science, University of Glasgow. Spring 2014