

CURRICULUM VITAE

Maurizio Filippone

- Email: maurizio.filippone@kaust.edu.sa
- Web Page: <https://mauriziofilippone.github.io/>

Education

I received a Master's degree in Physics and a Ph.D. in Computer Science from the University of Genoa, Italy, in 2004 and 2008, respectively. The reason to pursue a Ph.D. in Computer Science was to deepen my interest in Computational Statistics and Machine Learning, which sparked towards the end of my studies in Physics. I hold a "Post-graduate certificate in academic practice", which I obtained during my Lectureship at Glasgow. I also hold the French habilitation "Habilitation à diriger des recherches", which is the highest degree in the French academic system to allow someone to become a Professor.

Academic Positions

- Current position – **Associate Professor** – Statistics Program, KAUST, Saudi Arabia
- Fall 2018 to end of 2023 – *Professeur Classe 2* – Department of Data Science, EURECOM, Biot, France
- Fall 2015 to Fall 2018 – *Maître de Conférences Classe 1* – EURECOM, Biot, France
- Fall 2011 to Fall 2015 – *Lecturer* – School of Computing Science – University of Glasgow, UK
- Fall 2010 to Fall 2011 – *Research Associate* (PI: Prof. M. Girolami) – University College London (2011) and University of Glasgow (2010), UK
- Spring 2008 to Fall 2009 – *Research Associate* (PI: Prof. G. Sanguinetti) – University of Sheffield, UK
- Spring 2007 to Fall 2007 – *Research Scholar* (PIs: Profs. D. Barbarà, C. Domeniconi) – George Mason University, Fairfax VA, USA

Research contributions and impact

My research interests are in the field of Bayesian Statistics. Over the last twelve years, I have focused on Bayesian models based on Gaussian processes, proposing a number of fundamental contributions to their applicability to large-scale problems. Due to the advancements in the field, myself and other groups working in the domain have established ways to cast Gaussian processes and Deep Gaussian processes as Bayesian Neural Networks. As a result, my research is currently focusing on Bayesian Deep Learning, and techniques at the interface between Gaussian processes and Deep Neural Networks.

After my Ph.D., I've published 100+ papers almost equally split between journals and conference, and I have been the leading author (either first or last) in most of these. As of Dec 2025, I've received about 5500 citations and my *h*-index is 37 (source Google Scholar).

Selected Research Grants

- Co-PI: *Assessing livestock grazing impacts and carrying capacity in Saudi Arabia's terrestrial ecosystems* (\$675K), 2025–2028, Competitive Research Grants call at KAUST
- PI: *MUSE-COM²: AI-enabled MULTimodal SEMantic COMMunications and COMputing* (300K€), 2023–2026, ANR and EU (Chist-ERA call)
- PI: AXA Chair of Computational Statistics: *New Computational Approaches to Risk Modeling* (600K€), 2016–2023, AXA Research Fund
- PI: *ECO-ML: Rethinking Modern Machine Learning Tools for a New Generation of Low-Power Large-Scale Modeling Systems* (300K€), 2018–2021, National French funding agency, JCJC research grant
- PI: 3IA Chair: *Deep Probabilistic Modeling on Novel Hardware* (~200K€), 2020–2023, AI center funded by the National French funding agency ANR
- Partner: European Training Network: *WindMill: Machine Learning for Wireless Communications* (~200K€), 2018–2022, EU Horizon 2020.
- Co-PI: *Computational inference of biopathway dynamics and structures* (£340K), 2014–2017, (PI D. Husmeier and (Co-PI) S. Rogers - EPSRC (UK) research grant

Supervision of Postdoctoral Fellows and Graduate Students

I'm currently co-supervising two **post-docs** (**Emmanuel Ambriz** and **Mohamad Hittawe**). Before joining KAUST, I supervised two post-docs, **Simone Rossi** and **Dimitrios Milios**, who were partially funded by two grants on fundamentals of Bayesian Statistics. I also co-supervised one post-doc **Giulio Franzese** on representation learning and generative modeling. Shortly after joining EURECOM, I supervised another post-doc **Sebastien Marmin** on the same grants, and before joining EURECOM, I co-supervised **Mu Niu** as a post-doc for three years at the University of Glasgow, funded by a grant from the UK research council EPSRC.

I'm currently supervising three Ph.D. students (**Mattia Rosso**, **Madi Matymov**, and **Simon Galeano-Muñoz**), and one Ms/Ph.D. student (**Temirlan Sergazy**). Before joining KAUST, I completed the supervision of three **Ph.D. students** at EURECOM, **Bogdan Kozyrskiy** (ended in Spring 2023), and **Ba-Hien Tran** (ended in Fall 2023) who were partially funded by two grants on fundamentals of Bayesian Statistics; the third Ph.D. student **Davit Gogolashvili** was funded by European training network on Machine Learning for Wireless Communication Networks (EU grant WindMILL). Between 2015 and 2020 I graduated five Ph.D. students under my supervision at EURECOM, **Jonas Wacker**, **Kurt Cutajar**, **Gia-Lac Tran**, **Simone Rossi**, and **Remi Domingues**, the first four on fundamentals of Bayesian Statistics, and the last one on statistical methods for fraud detection in collaboration with the company Amadeus. At the same time, I also co-supervised Ph.D. students funded by industry with Amadeus on time series (**Rosa Candela**) and with SAP on interpretability (**Graziano Mita**). Prior to joining EURECOM, I supervised a self-funded Ph.D. student **Xiaoyu Xiong** at the University of Glasgow.

Teaching Activities

I started teaching when I joined the University of Glasgow as a lecturer in 2011, where I taught undergraduate and post-graduate courses in **Algorithmic Foundations** and **Machine Learning**. In Glasgow, I also designed and created the material of a new course in **Artificial Intelligence**. After joining EURECOM, I gave lectures on Bayesian Statistics in a course named **Advanced Statistical Inference**. At KAUST, I am teaching a new course on **Bayesian Deep Learning** and one on **Bayesian Statistics**. Between 2018 and 2019, I delivered lectures at the MLCC **summer school** in Genoa, Italy, and I designed and created the material for a **tutorial** on Gaussian processes at the IJCNN 2019 conference in collaboration with E. V. Bonilla, and another one on Bayesian Deep Learning at the IJCAI 2021 conference in collaboration with my (at the time) Ph.D. student S. Rossi.

Service to the Scientific Community

I am and I have been a **Program committee** member for several international conferences. Here is a selection including the most prestigious ones: NeurIPS (2014–2025), ICML (2015–2025), AISTATS (2012–2025), ECML (2016–2017), IJCAI (2016), IJCNN (2006–2010, 2015). I'm acting as an **Area Chair** for AISTATS since 2020 and as a **Senior Area Chair** for AISTATS since 2023, as well as an **Area Chair** for ICML since 2026. In 2025, I was **Senior Program Committee** member for the AAAI conference, and I was **Guest Editor** for the ECML/PKDD Machine Learning Journal track in 2020. Between 2013 and 2016 I served as an **Associate Editor** for the journals Pattern Recognition and the IEEE Transactions on Neural Networks and Learning Systems.

Selected Presentations

I constantly receive invitations to deliver **keynote** presentations at international events. In 2025, I was invited for a keynote at the Huawei Lavender Summit in Paris. In 2024, I gave an invited talk at the Approximate Inference in Theory and Practice workshop in Paris, and at two sessions on Advances in Inference and Theory for Bayesian Neural Networks and Recent Advances on High Dimensional Models at the JSM conference and at the ICSDS conference, respectively. In 2023, I was invited to present my work at the symposium on Advances in Approximate Bayesian Inference (AABI) at ICML and at the Generative Modeling and Uncertainty Quantification (GenU) workshop in Copenhagen. In 2022, I opened the workshop on Statistical Deep Learning in Sydney, Australia, in 2019 I presented at the Northern Lights Deep Learning Workshop in Tromsø, Norway, and in 2018 I presented at the Workshop on Surrogate models for Uncertainty Quantification in Complex Systems in Cambridge, UK.

I've also been actively promoting my research through **invited talks**. Here is a selected list over the past few years: KTH (2025), NTNU (2023), Aalto University (2023), Stanford University (2022),

University California Irvine (2022), University of Wollongong (2022), Data61, Sydney (2022), University of Oxford (2019, 2015), Imperial College (2018), Google Research NYC (2017), Yandex Moscow (2017), University of Sheffield (2015), Columbia University (2017, 2014), Bristol University (2014), University of Edinburgh (2014).

In addition, I gave invited lectures at the Deep Bayes summer school in Moscow, Russia (2018, 2019), at the MLCC summer school in Genoa, Italy (2019), and I delivered a tutorial on Gaussian processes at the IJCNN 2019 conference and a tutorial on Bayesian Deep Learning at the IJCAI 2021 conference.

Media Coverage

- *The Conversation* - 26 July 2019 - “Light, a possible solution for a sustainable AI”
- *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”

Major Collaborations

I have a number of international collaborations, which developed out of shared scientific interests with **Stephan Mandt** and **Babak Shahbaba** (Computer Science and Statistics departments at University California Irvine), **John P. Cunningham** (Department of Statistics, Columbia University), **Lorenzo A. Rosasco**, (University of Genoa and MIT), **Edwin V. Bonilla** (Data61, Sydney, Australia), **Michael A. Osborne** (University of Oxford, UK), and **Markus Heinonen** (Aalto University, Helsinki, Finland). Between 2016 and 2021, I was also named collaborator in two grants to develop the application of Bayesian Statistics to neuroscience and spatial statistics. In particular, the Wellcome trust grant “BRAINCHART: Normative brain charting for predicting and stratifying psychosis” with PI **Andre Marquand** (Donders Institute, Nijmegen, The Netherlands), and on the Australian Research Council Discovery Early Career Researcher Award (DECRA) grant with PI **Andrew Zammit-Mangion** (University of Wollongong, Australia).

Awards

- Best Ph.D. Thesis Award obtained by former student Ba-Hien Tran, Doctoral School of Sorbonne University, France, December 2023
- International Association of Pattern Recognition best paper award: M. Filippone, et al. **A survey of kernel and spectral methods for clustering**. *Pattern Recognition*, 41(1):176-190, January 2008.
- I received a “Special Mention” award for a poster at the Autumn meeting on Latent Gaussian Models in Trondheim, Norway in 2015.

Full list of publications

Journals

- M. Rosso, J. Ylä-Jääski, Z. Shen, M. Heinonen, and M. Filippone. Gaussian Processes with Bayesian Inference of Covariate Couplings. *Transactions on Machine Learning Research*, 2025.
- J. Wacker, M. Kanagawa, and M. Filippone. Improved Random Features for Dot Product Kernels. *Journal of Machine Learning Research*, 25(235):1–75, 2024.
- A. Zammit-Mangion, M.D. Kaminski, B. Tran, M. Filippone, and N. Cressie. Spatial Bayesian neural networks. *Spatial Statistics*, 60:100825, 2024.
- G. Franzese, S. Rossi, L. Yang, A. Finamore, D. Rossi, M. Filippone, and P. Michiardi. How Much Is Enough? A Study on Diffusion Times in Score-Based Generative Models. *Entropy*, 25(4), 2023.
- B. Tran, S. Rossi, D. Milios, and M. Filippone. All You Need is a Good Functional Prior for Bayesian Deep Learning. *Journal of Machine Learning Research*, 23(74):1–56, 2022.
- S. Marmin, and M. Filippone. Deep Gaussian Processes for Calibration of Computer Models (with Discussion). *Bayesian Analysis*, 17(4):1301 – 1350, 2022.
- C. Carota, M. Filippone, and S. Polettini. Assessing Bayesian Semi-Parametric Log-Linear Models: An Application to Disclosure Risk Estimation. *International Statistical Review*, 90(1):165-183, 2022.
- A. Zammit-Mangion, T.L.J. Ng, Q. Vu, and M. Filippone. Deep Compositional Spatial Models. *Journal of the American Statistical Association*, 117(540):1787–1808, 2022.

- R. Domingues, P. Michiardi, J. Barlet, and M. Filippone. A comparative evaluation of novelty detection algorithms for discrete sequences. *Artificial Intelligence Review*, 53:3787-3812, 2020.
- M. Lorenzi, M. Filippone, G.B. Frisoni, D.C. Alexander, and S. Ourselin. Probabilistic disease progression modeling to characterize diagnostic uncertainty: Application to staging and prediction in Alzheimer’s disease. *NeuroImage*, 190:56–68, 2019.
- R. Domingues, P. Michiardi, J. Zouaoui, and M. Filippone. Deep Gaussian Process autoencoders for novelty detection. *Machine Learning*, 107(8-10):1363–1383, 2018.
- R. Domingues, M. Filippone, P. Michiardi, and J. Zouaoui. A comparative evaluation of outlier detection algorithms: Experiments and analyses. *Pattern Recognition*, 74:406–421, 2018.
- M. Niu, B. Macdonald, S. Rogers, M. Filippone, and D. Husmeier. Statistical inference in mechanistic models: time warping for improved gradient matching. *Computational Statistics*, 1–33, 2017.
- X. Xiong, V. Šmídl, and M. Filippone. Adaptive multiple importance sampling for Gaussian processes. *Journal of Statistical Computation and Simulation*, 87(8):1644-1665, 2017.
- B. Macdonald, M. Niu, S. Rogers, M. Filippone, and D. Husmeier. Approximate parameter inference in systems biology using gradient matching: a comparative evaluation. *BioMedical Engineering OnLine*, 15(Suppl 1):80, 2016.
- J.M. Rondina, M. Filippone, M. Girolami, and N.S. Ward. Decoding post-stroke motor function from structural brain imaging. *NeuroImage: Clinical*, 12:372-380, 2016.
- C. Carota, M. Filippone, R. Leombruni, and S. Polettoni. Bayesian nonparametric disclosure risk estimation via mixed effects log-linear models. *Annals of Applied Statistics*, 9(1):525-546, 2015.
- M. Dell’Amico, M. Filippone, P. Michiardi, and Y. Roudier. On User Availability Prediction and Network Applications. *IEEE/ACM Transactions on Networking*, 23(4):1300-1313, 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.
- S. Kim, F. Valente, M. Filippone, and A. Vinciarelli. Predicting Continuous Conflict Perception with Bayesian Gaussian Processes. *IEEE Transactions on Affective Computing*, 5(2):187-200, 2014.
- A.F. Marquand, M. Filippone, J. Ashburner, M. Girolami, J. Mourão-Miranda, G.J. Barker, S.C... Williams, P.N. Leigh, and C.R.V. Blain. Automated, High Accuracy Classification of Parkinsonian Disorders: A Pattern Recognition Approach. *PLoS ONE*, 8(7):e69237+, 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.
- Y. Zhao, J. Kim, and M. Filippone. Aggregation Algorithm Towards Large-Scale Boolean Network Analysis. *IEEE Transactions on Automatic Control*, 58(8):1976-1985, 2013.
- M. Filippone, A.F. Marquand, C.R.V. Blain, S.C... 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.
- L. Mohamed, B. Calderhead, M. Filippone, M. Christie, and M. Girolami. Population MCMC methods for history matching and uncertainty quantification. *Computational Geosciences*, 16(2):423-436, 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.
- M. Filippone, F. Masulli, and S. Rovetta. Simulated annealing for supervised gene selection. *Soft Computing - A Fusion of Foundations, Methodologies and Applications*, 15:1471-1482, 2011.
- 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, 2010.
- M. Filippone, and G. Sanguinetti. Information Theoretic Novelty Detection. *Pattern Recognition*, 43(3):805-814, 2010.
- M. Filippone. Dealing with Non-Metric Dissimilarities in Fuzzy Central Clustering Algorithms. *International Journal of Approximate Reasoning*, 50(2):363-384, 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, 2009.
- M. Filippone, F. Masulli, and S. Rovetta. Clustering in the Membership Embedding Space. *International Journal of Knowledge Engineering and Soft Data Paradigms*, 4(1):363-375, 2009.
- S. Rovetta, F. Masulli, and M. Filippone. Soft Ranking in Clustering. *Neurocomputing*, 72(7-9):2028-2031, 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, 2008.

Conferences

- A. Benechehab, V. Feofanov, G. Paolo, A. Thomas, M. Filippone, and B. Kégl. AdaPTS: Adapting Univariate Foundation Models to Probabilistic Multivariate Time Series Forecasting. In A. Singh, M. Fazel, D. Hsu, S. Lacoste-Julien, F. Berkenkamp, T. Maharaj, K. Wagstaff, and J. Zhu, editors, *Proceedings of the 42nd International Conference on Machine Learning*, volume 267 of *Proceedings of Machine Learning Research*, pages 3731–3748. PMLR, 2025.
- M. Heinonen, B. Tran, M. Kampffmeyer, and M. Filippone. Robust Classification by Coupling Data Mollification with Label Smoothing. In *The 28th International Conference on Artificial Intelligence and Statistics*. 2025.
- A. Lhéritier, and M. Filippone. Unconditionally Calibrated Priors for Beta Mixture Density Networks. In *The 28th International Conference on Artificial Intelligence and Statistics*. 2025.
- A. Benechehab, Y.A.E. Hili, A. Odonnat, O. Zekri, A. Thomas, G. Paolo, M. Filippone, I. Redko, and B. Kégl. Zero-shot Model-based Reinforcement Learning using Large Language Models. In *The Thirteenth International Conference on Learning Representations*. 2025.
- T. Papamarkou, M. Skoularidou, K. Palla, L. Aitchison, J. Arbel, D. Dunson, M. Filippone, V. Fortuin, P. Hennig, J.M. Hernández-Lobato, A. Hubin, A. Immer, T. Karaletsos, M.E. Khan, A. Kristiadi, Y. Li, S. Mandt, C. Nemeth, M.A. Osborne, T.G.J. Rudner, D. Rüger, Y.W. Teh, M. Welling, A.G. Wilson, and R. Zhang. Position: Bayesian Deep Learning is Needed in the Age of Large-Scale AI. In R. Salakhutdinov, Z. Kolter, K. Heller, A. Weller, N. Oliver, J. Scarlett, and F. Berkenkamp, editors, *Proceedings of the 41st International Conference on Machine Learning*, volume 235 of *Proceedings of Machine Learning Research*, pages 39556–39586. PMLR, 2024.
- B. Tran, B. Shahbaba, S. Mandt, and M. Filippone. Fully Bayesian Autoencoders with Latent Sparse Gaussian Processes. In A. Krause, E. Brunskill, K. Cho, B. Engelhardt, S. Sabato, and J. Scarlett, editors, *Proceedings of the 40th International Conference on Machine Learning*, volume 202 of *Proceedings of Machine Learning Research*, pages 34409–34430. PMLR, 2023.
- B. Tran, G. Franzese, P. Michiardi, and M. Filippone. One-Line-of-Code Data Mollification Improves Optimization of Likelihood-based Generative Models. In A. Oh, T. Neumann, A. Globerson, K. Saenko, M. Hardt, and S. Levine, editors, *Advances in Neural Information Processing Systems*, volume 36, pages 6545–6567. Curran Associates, Inc., 2023.
- G. Franzese, G. Corallo, S. Rossi, M. Heinonen, M. Filippone, and P. Michiardi. Continuous-Time Functional Diffusion Processes. In A. Oh, T. Neumann, A. Globerson, K. Saenko, M. Hardt, and S. Levine, editors, *Advances in Neural Information Processing Systems*, volume 36, pages 37370–37400. Curran Associates, Inc., 2023.
- J. Wacker, R. Ohana, and M. Filippone. Complex-to-Real Sketches for Tensor Products with Applications to the Polynomial Kernel. In F. Ruiz, J. Dy, and J. Meent, editors, *Proceedings of The 26th International Conference on Artificial Intelligence and Statistics*, volume 206 of *Proceedings of Machine Learning Research*, pages 5181–5212. PMLR, 2023.
- G. Franzese, D. Milios, M. Filippone, and P. Michiardi. Revisiting the Effects of Stochasticity for Hamiltonian Samplers. In K. Chaudhuri, S. Jegelka, L. Song, C. Szepesvari, G. Niu, and S. Sabato, editors, *Proceedings of the 39th International Conference on Machine Learning*, volume 162 of *Proceedings of Machine Learning Research*, pages 6744–6778. PMLR, 2022.
- B. Tran, S. Rossi, D. Milios, P. Michiardi, E.V. Bonilla, and M. Filippone. Model Selection for Bayesian Autoencoders. In A. Beygelzimer, Y. Dauphin, P. Liang, and J.W. Vaughan, editors, *Advances in Neural Information Processing Systems*. 2021.
- G. Tran, D. Milios, P. Michiardi, and M. Filippone. Sparse within Sparse Gaussian Processes using Neighbor Information. In M. Meila, and T. Zhang, editors, *Proceedings of the 38th International Conference on Machine Learning*, volume 139 of *Proceedings of Machine Learning Research*, pages 10369–10378. PMLR, 2021.
- G. Mita, M. Filippone, and P. Michiardi. An Identifiable Double VAE For Disentangled Representations. In M. Meila, and T. Zhang, editors, *Proceedings of the 38th International Conference on Machine Learning*, volume 139 of *Proceedings of Machine Learning Research*, pages 7769–7779. PMLR, 2021.
- S. Rossi, M. Heinonen, E. Bonilla, Z. Shen, and M. Filippone. Sparse Gaussian Processes Revisited: Bayesian Approaches to Inducing-Variable Approximations. In A. Banerjee, and K. Fukumizu, editors, *Proceedings of The 24th International Conference on Artificial Intelligence and Statistics*, volume 130 of *Proceedings of Machine Learning Research*, pages 1837–1845. PMLR, 2021.
- S. Rossi, S. Marmin, and M. Filippone. Walsh-Hadamard Variational Inference for Bayesian Deep Learning. In H. Larochelle, M. Ranzato, R. Hadsell, M. Balcan, and H. Lin, editors, *Advances in Neural Information Processing Systems*, volume 33, pages 9674–9686. Curran Associates, Inc., 2020.

- G. Mita, P. Papotti, M. Filippone, and P. Michiardi. LIBRE: Learning Interpretable Boolean Rule Ensembles. In *AISTATS 2020, Palermo, Italy*. 2020.
- S. Rossi, S. Marmin, and M. Filippone. Efficient Approximate Inference with Walsh-Hadamard Variational Inference. In *Bayesian Deep Learning Workshop, NeurIPS*. 2019.
- C. Nemeth, F. Lindsten, M. Filippone, and J. Hensman. Pseudo-extended Markov chain Monte Carlo. In *Advances in Neural Information Processing Systems 32: Annual Conference on Neural Information Processing Systems 2019, 9-12 December 2019, Vancouver, British Columbia, Canada*. 2019.
- S. Rossi, P. Michiardi, and M. Filippone. Good Initializations of Variational Bayes for Deep Models. In *Proceedings of the 36th International Conference on Machine Learning, ICML 2019, Long Beach, USA, 2019*. 2019.
- G. Tran, E.V. Bonilla, J.P. Cunningham, P. Michiardi, and M. Filippone. Calibrating Deep Convolutional Gaussian Processes. In *AISTATS 2019, Naha, Japan, 2019*. 2019.
- D. Nguyen, M. Filippone, and P. Michiardi. Exact Gaussian process regression with distributed computations. In C. Hung, and G.A. Papadopoulos, editors, *Proceedings of the 34th ACM/SIGAPP Symposium on Applied Computing, SAC 2019, Limassol, Cyprus, April 8-12, 2019*, pages 1286–1295. ACM, 2019.
- D. Milios, R. Camoriano, P. Michiardi, L. Rosasco, and M. Filippone. Dirichlet-based Gaussian Processes for Large-scale Calibrated Classification. In *Advances in Neural Information Processing Systems 31: Annual Conference on Neural Information Processing Systems 2018, December 3-7 2018, Montreal, Quebec, Canada*. 2018.
- M. Lorenzi, and M. Filippone. Constraining the Dynamics of Deep Probabilistic Models. In *Proceedings of the 35th International Conference on Machine Learning, ICML 2018, Stockholm, Sweden, 2018*. 2018.
- J. Fitzsimons, D. Granziol, K. Cutajar, M. Osborne, M. Filippone, and S. Roberts. Entropic Trace Estimates for Log Determinants. In *Machine Learning and Knowledge Discovery in Databases - European Conference, ECML PKDD 2017, Skopje, Macedonia, September 18-22, 2017*. 2017.
- J. Fitzsimons, K. Cutajar, M. Osborne, S. Roberts, and M. Filippone. Bayesian Inference of Log Determinants. In *Thirty-Third Conference on Uncertainty in Artificial Intelligence, UAI 2017, August 11-15, 2017, Sydney, Australia*. 2017.
- K. Krauth, E.V. Bonilla, K. Cutajar, and M. Filippone. AutoGP: Exploring the Capabilities and Limitations of Gaussian Process Models. In *Thirty-Third Conference on Uncertainty in Artificial Intelligence, UAI 2017, August 11-15, 2017, Sydney, Australia*. 2017.
- 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.
- Y. Han, and M. Filippone. Mini-Batch Spectral Clustering. In *2016 International Joint Conference on Neural Networks, IJCNN 2017, Anchorage, AK, USA, May 14-19, 2017*. IEEE, 2017.
- K. Cutajar, E.V. Bonilla, P. Michiardi, and M. Filippone. Accelerating Deep Gaussian Processes Inference with Arc-Cosine Kernels. In *Bayesian Deep Learning Workshop, NIPS*. 2016.
- X. Xiong, M. Filippone, and A. Vinciarelli. Looking Good With Flickr Faves: Gaussian Processes for Finding Difference Makers in Personality Impressions. In *ACM Multimedia*. 2016.
- 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.
- M. Niu, S. Rogers, M. Filippone, and D. Husmeier. Fast Inference in Nonlinear Dynamical Systems using Gradient Matching. 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. 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. Dell’Amico, and M. Filippone. Monte Carlo Strength Evaluation: Fast and Reliable Password Checking. In *Proceedings of the 22nd ACM Conference on Computer and Communications Security*. 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. 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. 2014.

- A.D. O’Harney, A. Marquand, K. Rubia, K. Chantiluke, A.B. Smith, A. Cubillo, C. Blain, and M. Filippone. Pseudo-Marginal Bayesian Multiple-Class Multiple-Kernel Learning for Neuroimaging Data. In *22nd International Conference on Pattern Recognition, ICPR 2014, Stockholm, Sweden, August 24-28, 2014*, pages 3185–3190. 2014.
- F. Dondelinger, M. Filippone, S. Rogers, and D. Husmeier. ODE parameter inference using adaptive gradient matching with Gaussian processes. In *AISTATS*. 2013.
- S. Kim, M. Filippone, F. Valente, and A. Vinciarelli. Predicting the conflict level in television political debates: an approach based on crowdsourcing, nonverbal communication and Gaussian processes. In *Proceedings of the 20th ACM Multimedia Conference, MM ’12, Nara, Japan, October 29 - November 02, 2012*, pages 793-796. ACM, 2012.
- G. Mohammadi, A. Origlia, M. Filippone, and A. Vinciarelli. From speech to personality: mapping voice quality and intonation into personality differences. In *Proceedings of the 20th ACM Multimedia Conference, MM ’12, Nara, Japan, October 29 - November 02, 2012*, pages 789-792. ACM, 2012.
- D. Barbará, C. Domeniconi, Z. Duric, M. Filippone, R. Mansfield, and E. Lawson. Detecting Suspicious Behavior in Surveillance Images. In *Workshops Proceedings of the 8th IEEE International Conference on Data Mining (ICDM 2008), December 15-19, 2008, Pisa, Italy*, pages 891-900. IEEE, 2008.
- M. Filippone, F. Masulli, and S. Rovetta. Stability and Performances in Biclustering Algorithms. In *Computational Intelligence Methods for Bioinformatics and Biostatistics, 5th International Meeting, CIBB 2008, Vietri sul Mare, Italy, October 3-4, 2008, Revised Selected Papers*, volume 5488 of *Lecture Notes in Computer Science*, pages 91-101. Springer, 2008.
- M. Filippone, F. Masulli, and S. Rovetta. An Experimental Comparison of Kernel Clustering Methods. In *New Directions in Neural Networks - 18th Italian Workshop on Neural Networks: WIRN 2008, Vietri sul Mare, Italy, May 22-24, 2008, Revised Selected Papers*, volume 193 of *Frontiers in Artificial Intelligence and Applications*, pages 118-126. IOS Press, 2008.
- F. Camastra, and M. Filippone. SVM-Based Time Series Prediction with Nonlinear Dynamics Methods. In *Knowledge-Based Intelligent Information and Engineering Systems, 11th International Conference, KES 2007, XVII Italian Workshop on Neural Networks, Vietri sul Mare, Italy, September 12-14, 2007, Proceedings, Part III*, volume 4694 of *Lecture Notes in Computer Science*, pages 300-307. Springer, 2007.
- S. Rovetta, F. Masulli, and M. Filippone. Membership Embedding Space Approach and Spectral Clustering. In *Knowledge-Based Intelligent Information and Engineering Systems, 11th International Conference, KES 2007, XVII Italian Workshop on Neural Networks, Vietri sul Mare, Italy, September 12-14, 2007, Proceedings, Part III*, volume 4694 of *Lecture Notes in Computer Science*, pages 901-908. Springer, 2007.
- E. Canestrelli, P. Canestrelli, M. Corazza, M. Filippone, S. Giove, and F. Masulli. Local Learning of Tide Level Time Series using a Fuzzy Approach. In *Proceedings of the International Joint Conference on Neural Networks, IJCNN 2007, Celebrating 20 years of neural networks, Orlando, Florida, USA, August 12-17, 2007*, pages 1813-1818. IEEE, 2007.
- M. Filippone, F. Masulli, and S. Rovetta. Possibilistic Clustering in Feature Space. In *Applications of Fuzzy Sets Theory, 7th International Workshop on Fuzzy Logic and Applications, WILF 2007, Camogli, Italy, July 7-10, 2007, Proceedings*, volume 4578 of *Lecture Notes in Computer Science*, pages 219-226. Springer, 2007.
- 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, International Conference, CMSB 2006, Trento, Italy, October 18-19, 2006, Proceedings*, volume 4210 of *Lecture Notes in Computer Science*, pages 312-322. Springer, 2006.
- M. Filippone, F. Masulli, S. Rovetta, and S. Constantinescu. Input Selection with Mixed Data Sets: A Simulated Annealing Wrapper Approach. In *CISI 06 - Conferenza Italiana Sistemi Intelligenti*. Ancona - Italy, 2006.
- M. Filippone, F. Masulli, and S. Rovetta. Gene Expression Data Analysis in the Membership Embedding Space: A Constructive Approach.. In *CIBB 2006 - Third International Meeting on Computational Intelligence Methods for Bioinformatics and Biostatistics*. Genova - Italy, 2006.
- M. Filippone, F. Masulli, and S. Rovetta. Supervised Classification and Gene Selection Using Simulated Annealing. In *Proceedings of the International Joint Conference on Neural Networks, IJCNN 2006, part of the IEEE World Congress on Computational Intelligence, WCCI 2006, Vancouver, BC, Canada, 16-21 July 2006*, pages 3566-3571. IEEE, 2006.
- M. Filippone, F. Masulli, and S. Rovetta. Unsupervised Gene Selection and Clustering Using Simulated

Annealing.. In *Fuzzy Logic and Applications, 6th International Workshop, WILF 2005, Crema, Italy, September 15-17, 2005, Revised Selected Papers*, volume 3849 of *Lecture Notes in Computer Science*, pages 229-235. Springer, 2005.

- F. Masulli, S. Rovetta, and M. Filippone. Clustering Genomic Data in the Membership Embedding Space. In *CI-BIO - Workshop on Computational Intelligence Approaches for the Analysis of Bioinformatics Data*. Montreal - Canada, 2005.
- S. Rovetta, F. Masulli, and M. Filippone. Soft Rank Clustering. In *Neural Nets, 16th Italian Workshop on Neural Nets, WIRN 2005, and International Workshop on Natural and Artificial Immune Systems, NAIS 2005, Vietri sul Mare, Italy, June 8-11, 2005, Revised Selected Papers*, volume 3931 of *Lecture Notes in Computer Science*, pages 207-213. Springer, 2005.
- M. Filippone, F. Masulli, and S. Rovetta. ERAF: a R Package for Regression and Forecasting. In *Biological and Artificial Intelligence Environments*, pages 165-173. Secaucus, NJ, USA, Springer-Verlag New York, Inc., 2004.

Discussions

- S. Rossi, C. Rusu, L.A. Rosasco, and M. Filippone. Contributed discussion on "A Bayesian conjugate gradient method". *Bayesian Analysis*, 14(3), 2019, 2019.
- M. Filippone, A. Mira, and M. Girolami. Discussion of the paper: "Sampling schemes for generalized linear Dirichlet process random effects models" by M. Kyung, J. Gill, and G. Casella. *Statistical Methods & Applications*, 20:295-297, 2011.
- M. Filippone. Discussion of the paper "Riemann manifold Langevin and Hamiltonian Monte Carlo methods" by Mark Girolami and Ben Calderhead. *Journal of the Royal Statistical Society, Series B (Statistical Methodology)*, 73(2):164-165, 2011.
- V. Stathopoulos, and M. Filippone. Discussion of the paper "Riemann manifold Langevin and Hamiltonian Monte Carlo methods" by Mark Girolami and Ben Calderhead. *Journal of the Royal Statistical Society, Series B (Statistical Methodology)*, 73(2):167-168, 2011.

Theses

- M. Filippone. Central Clustering in Kernel-Induced Spaces. Ph.D. thesis, University of Genova, 2008.
- M. Filippone. Metodi di Ensemble per la Previsione di Serie Storiche. M.Sc. thesis, University of Genova, 2004.