Pablo **Moreno-Muñoz**

Universitat Pompeu Fabra (UPF)
Dept. of Information and Communication Technologies
Artificial Intelligence Group
08018 Barcelona, Spain

pablo.moreno@upf.edu
Room 217 / Building 55
https://pmorenoz.github.io/
https://github.com/pmorenoz

POSITIONS		
	Universitat Pompeu Fabra (UPF)	Nov 2024 - Present
	Research Fellow. AI Group @ Dept. TIC	
	funded by _"LaCaixa" Foundation Junior Leader Grant_	
	Technical University of Denmark (DTU)	April 2021 - Oct 2024
	Postdoctoral researcher. Cognitive Systems Section	
	with Søren Hauberg (DTU Compute)	
	Max Planck Institute for Intelligent Systems	Feb. 2019 - Jun. 2019
	Research intern. Probabilistic Learning Group	
	Supervisor: Isabel Valera	
	University of Sheffield	Mar. 2018 - May 2018
	Visiting researcher. Probabilistic Machine Learning Group	
	Supervisor: Mauricio A. Álvarez	
	IMDEA Networks	Oct. 2015
	Student intern. Madrid Institute of Advanced Studies	
	European Space Agency (ESA)	Mar. 2015 - Sep. 2015
	Trainee. European Space Astronomy Center	
	Supervisors: Tim Rawle and Bruno Altieri	

EDUCATION		
	Universidad Carlos III de Madrid	Sep. 2016 - March. 2021
	PhD student in Machine Learning	
	Signal Processing Group Laboratory	
	Advisor: Dr. Antonio Artés	
	Universidad Carlos III de Madrid	Sep. 2014 - Jul. 2016
	M.Sc. in Multimedia and Communications	
	M.Sc. in Telecommunication Engineering	
	Technical University of Denmark (DTU)	Jan. 2013 - Jul. 2013
	Erasmus Scholarship, Telecommunications Engineering	
	Universidad Carlos III de Madrid	Sep. 2010 - Jul. 2014
	B.Sc. in Telecommunication Technologies	

TEACHING		
	Universidad Carlos III de Madrid	
	Teaching Assistant in Data Modelling	1st Semester 2020
	Teaching Assistant in Probabilistic Modelling and Inference	1st Semester 2019
	Teaching Assistant in Advanced Signal Processing	1st Semester 2018
	Teaching Assistant in Linear Systems	1st Semester 2016

SUMMER SCHOOLS & OTHERS		
	Generative AI in Life Sciences (GenLife), Copenhagen, Denmark	2024
	Generative Models and Uncertainty Quant. (GenU), Copenhagen, Denmark	2021-24
	Machine Learning Frontiers in Precision Medicine (MLFPM), Basel, Switzerland	2019
	Machine Learning Summer School (MLSS), Universidad Autónoma de Madrid	2018

Data Science Summer School (DS3), École Polytechnique, Paris	2017
Gaussian Process Summer School (GPSS), University of Sheffield	2017
Bayesian Optimization Course, Universidad Autónoma de Madrid	2016

TALKS

Universidad Carlos III de Madrid, Signal Processing Group	2023
Chair for Methods of Machine Learning, University of Tübingen, Germany	2023
Secondmind Seminar Series, Cambridge, UK	2022
Center for Basic Machine Learning Research in Life Science (MLLS), Denmark	2021
University of Sheffield, Probabilistic Machine Learning Group	2019
University of Sheffield, Probabilistic Machine Learning Group	2018
Universidad Carlos III de Madrid, Signal Processing Group	2017
Secondary School Research Com. Program, Comunidad de Madrid	2016

REVIEWING

Journal of Machine Learning Research (JMLR)	since 2018
Transactions on Machine Learning Research (TMLR)	since 2022
International Conference on Machine Learning (ICML)	2022
Artificial Intelligence and Statistics (AISTATS)	2021–2023
International Conference on Learning Representations (ICLR)	2020–2023
Neural Information Processing Systems (NeurIPS)	2019–2023
Machine Learning for Health Workshop at NIPS	2017–2022
IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)	2022
Machine Learning, Springer	2019

PEER-REV.
CONFERENCES

20. N. Krämer, <u>P. Moreno-Muñoz</u>, H. Roy and S. Hauberg,
Gradients of Functions of Large Matrices.
In Advances in Neural Information Processing Systems 37 (NeurIPS), 2024. (spotlight)

19. S. Syrota, <u>P. Moreno-Muñoz</u>, S. Hauberg.
Decoder ensembling for learned latent geometries.
In Workshop on Geometry-grounded Representation Learning and Generative Modeling (GRaM) @ ICML, 2024.

18. <u>P. Moreno-Muñoz</u>, Pol G. Recasens, S. Hauberg.
On Masked Pre-training and the Marginal Likelihood.
In Advances in Neural Information Processing Systems 36 (NeurIPS), 2023.

17. F. Bergamin, <u>P. Moreno-Muñoz</u>, S. Hauberg, G. Arvanitidis.
Riemannian Laplace approximation for Bayesian neural networks.
In Advances in Neural Information Processing Systems 36 (NeurIPS), 2023.

16. P. G. Recasens, J. Torres, J. L. Bernal, S. Hauberg and <u>P. Moreno-Muñoz</u>.
Beyond Parameter Averaging in Model Aggregation.
In Workshop on Federated Learning in the Age of Foundation Models @ NeurIPS, 2023.

15. S. Bartels, K. Stensbo-Smidt, <u>P. Moreno-Muñoz</u>, J. Frellsen,
W. Boomsma and S. Hauberg.
Adaptive Cholesky Gaussian Processes.
In Artificial Intelligence and Statistics (AISTATS), 2023.

14. M. Miani, F. Warburg, <u>P. Moreno-Muñoz</u>, N. S. Detlefsen and S. Hauberg.
Laplacian Autoencoders for Learning Stochastic Representations.
In Advances in Neural Information Processing Systems 35 (NeurIPS), 2022.

13. <u>P. Moreno-Muñoz</u>, C. W. Feldager and S. Hauberg.
Revisiting Active Sets for Gaussian Process Decoders.
In Advances in Neural Information Processing Systems 35 (NeurIPS), 2022.

12. <u>P. Moreno-Muñoz</u>, A. Artés-Rodríguez and Mauricio A. Álvarez.
Modular Gaussian Processes for Transfer Learning.
In Advances in Neural Information Processing Systems 34 (NeurIPS), 2021.

11. <u>P. Moreno-Muñoz</u>, L. Romero-Medrano, A. Moreno, J. Herrera-López,
E. Baca-García and A. Artés-Rodríguez.
Passive Detection of Behavioral Shifts for Suicide Attempt Prevention.
In Workshop in Machine Learning for Mobile-Health (ML4MH)@ NeurIPS, 2020.

10. L. Romero-Medrano, <u>P. Moreno-Muñoz</u> and A. Artés-Rodríguez.
Multinomial Sampling for Hierarchical Change-Point Detection.
In IEEE Workshop in Machine Learning for Signal Processing (MLSP), 2020.

9. <u>P. Moreno-Muñoz</u>, D. Ramírez and A. Artés-Rodríguez.
Continual Learning for Infinite Hierarchical Change-point Detection.
In Int. Conference on Acoustics, Speech and Signal Processing (ICASSP), 2020.

8. <u>P. Moreno-Muñoz</u>, A. Artés-Rodríguez and Mauricio A. Álvarez.
Heterogeneous Multi-output Gaussian Process Prediction.
In Advances in Neural Information Processing Systems 31 (NeurIPS), 2018. (spotlight)

PREPRINTS 7. H. Roy, M. Miani, S. Syrota, J. Ye, E. Zainchkovskyy, S. Brack, F. Warburg,
& MISC.   N. Krämer, <u>P. Moreno-Muñoz</u> and S. Hauberg.
All Layers Marginal Likelihood Training with Fully Correlated Linearized Laplace Approximations.
Under submission (soon in arXiv), 2023.

6. H. Hauschultz, R. B. Palm, <u>P. Moreno-Muñoz</u>, N. S. Detlefsen,
A. A. du Plessis and S. Hauberg.
Is an encoder within reach?.
In arXiv:2206.01552, 2022.

5. <u>P. Moreno-Muñoz</u>, A. Artés-Rodríguez and Mauricio A. Álvarez.
Continual Multi-task Gaussian Processes.
In arXiv:1911.00002, 2019.

JOURNALS 4. M. L. Barrigón, L. Romero-Medrano, <u>P. Moreno-Muñoz</u>, A. Porras-Segovia,
J. López-Castroman, A. Artés-Rodríguez and E. Baca-García.
One-week suicide risk prediction using real-time smartphone monitoring.
In Journal of Medical Internet Research (JMIR) mHealth and uHealth, 2023.

3. L. Romero-Medrano, <u>P. Moreno-Muñoz</u> and A. Artés-Rodríguez.
**Multinomial Sampling of Latent Variables
for Hierarchical Change-point Detection**.
In the Journal of Signal Processing Systems, MLSP Special Issue, 2021.

2. <u>P. Moreno-Muñoz</u>, D. Ramírez and A. Artés-Rodríguez.
Change-Point Detection in Hierarchical Circadian Models.
In Pattern Recognition, Elsevier, 2020.

1. S. Berrouiguet, D. Ramírez, M. L. Barrigón Estévez, <u>P. Moreno-Muñoz</u>, R. Carmona
Camacho, E. Baca-García and A. Artés-Rodríguez.
Combining continuous smartphone native sensors data capture and unsupervised data mining techniques for behavioral changes detection: The feasibility study of the Evidence Based Behavior (eB2) platform.
In Journal of Medical Internet Research (JMIR) mHealth and uHealth, 2018.

DISSERTATIONS	P. Moreno-Muñoz. **Probabilistic Models for Human Behavior Learning**. *Ph.D. Thesis Dissertation, Universidad Carlos III de Madrid.* 2021
	P. Moreno-Muñoz. **Change Point Detection in Behavioral High Dimensional Data**. *M.Sc. Thesis Dissertation (Multimedia and Communications).* 2016
	P. Moreno-Muñoz. **Anomalous Behavior Detection in Psychiatry**. *M.Sc. Thesis Dissertation (Telecommunication Engineering).* 2016
	P. Moreno-Muñoz. **Photometric Redshift within crowded galaxy fields**. *ESA Project Report.* 2015
	P. Moreno-Muñoz. **Statistical Learning Costs with Partial Labels**. *B.Sc. Thesis Dissertation* (spanish). 2014

OTHERS	J. J. Giraldo-Gutierrez, P. Moreno-Muñoz, M. A. Álvarez. **Natural Gradient Optimization for Improving Inference of Heterogeneous Multi-output Gaussian Process Models**, Advances in Data Science, Manchester, 2019 (poster)
	P. Moreno-Muñoz, A. Artés-Rodríguez, M. A. Álvarez. **Heterogeneous Multi-task Gaussian Process Learning**, Advances in Data Science, Manchester, 2018 (poster)

CO-AFFILIATIONS & MEMBERSHIPS	ELLIS Member, European Laboratory for Learning and Intelligent Systems	since 2023
	Center for Basic Machine Learning Research in Life Sciences (MLLS)	2021-2024
	Pioneer Centre for Artificial Intelligence (Denmark)	2021-2024

GRANTS, PRIZES & RECOGNITION	*LaCaixa* Foundation Junior Leader Fellowship Grant. (competitive, ∼305k EUR)	2024-2027
	Danish Data Science Academy (DDSA) Travel Grant.	2022
	FPI grant to fund doctoral studies. Ministry of Economy and Industry, Spain.	2016-2020
	Top reviewer in *Advances in Neural Information Processing (NeurIPS)*	2023
	Top 10% reviewer in *International Conference in Machine Learning (ICML)*	2022

LANGUAGES	**Spanish** – Mothertongue, **English** – Advanced (TOEFL: 100/120), **French** – Basic

REFERENCES	Gergely Neu, Universitat Pompeu Fabra (UPF), Barcelona. Søren Hauberg, Technical University of Denmark (DTU), Copenhagen. Antonio Artés-Rodríguez, Universidad Carlos III de Madrid. Mauricio A. Álvarez, University of Manchester, UK.