

# Pablo Moreno-Muñoz

---

Technical University of Denmark (DTU)  
Dept. of Applied Mathematics and Computer Science  
Section for Cognitive Systems  
2800 Kgs. Lyngby, Denmark

pabmo@dtu.dk  
Room 220 / Building 321  
<https://pmorenoz.github.io/>  
<https://github.com/pmorenoz>

POSITIONS	<b>Technical University of Denmark (DTU)</b> <i>Postdoctoral researcher</i> . Cognitive Systems Section with Søren Hauberg (DTU Compute)	April 2021 - Present
	<b>Max Planck Institute for Intelligent Systems</b> <i>Research intern</i> . Probabilistic Learning Group Supervisor: Isabel Valera	Feb. 2019 - Jun. 2019
	<b>University of Sheffield</b> <i>Visiting researcher</i> . Probabilistic Machine Learning Group Supervisor: Mauricio A. Álvarez	Mar. 2018 - May 2018
	<b>IMDEA Networks</b> <i>Student intern</i> . Madrid Institute of Advanced Studies	Oct. 2015
	<b>European Space Agency (ESA)</b> <i>Trainee</i> . European Space Astronomy Center Supervisors: Tim Rawle and Bruno Altieri	Mar. 2015 - Sep. 2015
EDUCATION	<b>Universidad Carlos III de Madrid</b> <i>PhD student in Machine Learning</i> Signal Processing Group Laboratory Advisor: Dr. Antonio Artés	Sep. 2016 - March. 2021
	<b>Universidad Carlos III de Madrid</b> M.Sc. in Multimedia and Communications M.Sc. in Telecommunication Engineering	Sep. 2014 - Jul. 2016
	<b>Technical University of Denmark (DTU)</b> Erasmus Scholarship, Telecommunications Engineering	Jan. 2013 - Jul. 2013
	<b>Universidad Carlos III de Madrid</b> B.Sc. in Telecommunication Technologies	Sep. 2010 - Jul. 2014
TEACHING	<b>Universidad Carlos III de Madrid</b> <i>Teaching Assistant</i> in Data Modelling	1st Semester 2020
	<i>Teaching Assistant</i> in Probabilistic Modelling and Inference	1st Semester 2019
	<i>Teaching Assistant</i> in Advanced Signal Processing	1st Semester 2018
	<i>Teaching Assistant</i> 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	2021-23
	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. 20.	S. Syrota, <u>P. Moreno-Muñoz</u> , S. Hauberg.	
CONFERENCES	<b>Decoder ensembling for learned latent geometries.</b> <i>In Workshop on Geometry-grounded Representation Learning and Generative Modeling (GRaM) @ ICML, 2024.</i>	
19.	<u>P. Moreno-Muñoz</u> , Pol G. Recasens, S. Hauberg. <b>On Masked Pre-training and the Marginal Likelihood.</b> <i>In Advances in Neural Information Processing Systems 36 (NeurIPS), 2023.</i>	
18.	F. Bergamin, <u>P. Moreno-Muñoz</u> , S. Hauberg, G. Arvanitidis. <b>Riemannian Laplace approximation for Bayesian neural networks.</b> <i>In Advances in Neural Information Processing Systems 36 (NeurIPS), 2023.</i>	
17.	P. G. Recasens, J. Torres, J. L. Bernal, S. Hauberg and <u>P. Moreno-Muñoz</u> . <b>Beyond Parameter Averaging in Model Aggregation.</b> <i>In Workshop on Federated Learning in the Age of Foundation Models @ NeurIPS, 2023.</i>	
16.	S. Bartels, K. Stensbo-Smidt, <u>P. Moreno-Muñoz</u> , J. Frellsen, W. Boomsma and S. Hauberg. <b>Adaptive Cholesky Gaussian Processes.</b> <i>In Artificial Intelligence and Statistics (AISTATS), 2023.</i>	
15.	M. Miani, F. Warburg, <u>P. Moreno-Muñoz</u> , N. S. Detlefsen and S. Hauberg. <b>Laplacian Autoencoders for Learning Stochastic Representations.</b> <i>In Advances in Neural Information Processing Systems 35 (NeurIPS), 2022.</i>	
14.	<u>P. Moreno-Muñoz</u> , C. W. Feldager and S. Hauberg. <b>Revisiting Active Sets for Gaussian Process Decoders.</b> <i>In Advances in Neural Information Processing Systems 35 (NeurIPS), 2022.</i>	
13.	<u>P. Moreno-Muñoz</u> , A. Artés-Rodríguez and Mauricio A. Álvarez. <b>Modular Gaussian Processes for Transfer Learning.</b> <i>In Advances in Neural Information Processing Systems 34 (NeurIPS), 2021.</i>	
12.	<u>P. Moreno-Muñoz</u> , L. Romero-Medrano, A. Moreno, J. Herrera-López, E. Baca-García and A. Artés-Rodríguez. <b>Passive Detection of Behavioral Shifts for Suicide Attempt Prevention.</b> <i>In Workshop in Machine Learning for Mobile-Health (ML4MH)@ NeurIPS, 2020.</i>	

11. L. Romero-Medrano, P. Moreno-Muñoz and A. Artés-Rodríguez.  
**Multinomial Sampling for Hierarchical Change-Point Detection.**  
*In IEEE Workshop in Machine Learning for Signal Processing (MLSP)*, 2020.
  10. P. Moreno-Muñoz, 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.
  9. P. Moreno-Muñoz, 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 & MISC.
8. N. Krämer, P. Moreno-Muñoz, H. Roy and S. Hauberg,  
**Gradients of Functions of Large Matrices.**  
*In arXiv:2405.17277*, 2024.
  7. H. Roy, M. Miani, S. Syrota, J. Ye, E. Zainchkovskyy, S. Brack, F. Warburg,  
N. Krämer, P. Moreno-Muñoz 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, P. Moreno-Muñoz, N. S. Detlefsen,  
A. A. du Plessis and S. Hauberg.  
**Is an encoder within reach?.**  
*In arXiv:2206.01552*, 2022.
  5. P. Moreno-Muñoz, 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, P. Moreno-Muñoz, 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, P. Moreno-Muñoz 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. P. Moreno-Muñoz, 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, P. Moreno-Muñoz, R. Carmona  
Camacho, E. Baca-García and A. Artés-Rodríguez.  
**Combining continuous smartphone native sensors data capture and unsu-  
pervised data mining techniques for behavioral changes detection: The fea-  
sibility 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

	<u>P. Moreno-Muñoz.</u> <b>Change Point Detection in Behavioral High Dimensional Data.</b> <i>M.Sc. Thesis Dissertation (Multimedia and Communications).</i> 2016	
	<u>P. Moreno-Muñoz.</u> <b>Anomalous Behavior Detection in Psychiatry.</b> <i>M.Sc. Thesis Dissertation (Telecommunication Engineering).</i> 2016	
	<u>P. Moreno-Muñoz.</u> <b>Photometric Redshift within crowded galaxy fields.</b> <i>ESA Project Report.</i> 2015	
	<u>P. Moreno-Muñoz.</u> <b>Statistical Learning Costs with Partial Labels.</b> <i>B.Sc. Thesis Dissertation (spanish).</i> 2014	
OTHERS	J. J. Giraldo-Gutierrez, <u>P. Moreno-Muñoz</u> , M. A. Álvarez. <b>Natural Gradient Optimization for Improving Inference of Heterogeneous Multi-output Gaussian Process Models</b> , Advances in Data Science, Manchester, 2019 (poster)  <u>P. Moreno-Muñoz</u> , A. Artés-Rodríguez, M. A. Álvarez. <b>Heterogeneous Multi-task Gaussian Process Learning</b> , 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)	since 2021
	Pioneer Centre for Artificial Intelligence (Denmark)	since 2021
GRANTS, PRIZES & RECOGNITION	<i>LaCaixa</i> Junior Leader Fellowship Grant. — (competitive)	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 <i>Advances in Neural Information Processing (NeurIPS)</i>	2023
	Top 10% reviewer in <i>International Conference in Machine Learning (ICML)</i>	2022
LANGUAGES	<b>Spanish</b> – Mothertongue, <b>English</b> – Advanced (TOEFL: 100/120), <b>French</b> – Basic	
REFERENCES	Søren Hauberg, Professor at Technical University of Denmark (DTU), Copenhagen. Antonio Artés-Rodríguez, Professor at Universidad Carlos III de Madrid. Mauricio A. Álvarez, Senior Lecturer at University of Manchester, UK.	