

Ignacio Peis

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Dept. of Applied Mathematics and Computer Science
Section for Cognitive Systems
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- POSITIONS**
- Technical University of Denmark, DTU** Oct. 2023 - Present
Postdoctoral Researcher
Section for Cognitive Systems
Dept. of Applied Mathematics and Computer Science
(DTU Compute)
- Universidad Carlos III de Madrid** Oct. 2019 - Sept. 2023
Predoctoral Researcher and Teaching Assistant
Signal Processing Group
Supervisors: Prof. Antonio Artés Rodríguez
Dr. Pablo Martínez Olmos
- Fundación UC3M** Dec. 2020 - Present
Course Instructor
Fundamentals, Intermediate and Advanced Machine
Learning courses for BBVA employees.
- University of Cambridge** Feb. 2021 - Feb. 2022
Visiting researcher
Machine Learning Group
Supervisor: Prof. José Miguel Hernández-Lobato
- Universidad Carlos III de Madrid** Feb. 2017 - Sept. 2019
Research associate
Signal Processing Group
Supervisor: Prof. Antonio Artés Rodríguez
- EDUCATION**
- Universidad Carlos III de Madrid** Oct 2018 - Oct 2023
PhD in Probabilistic Machine Learning
Cum Laude
Outstanding PhD Thesis Award

Advisors: Prof. Antonio Artés Rodríguez
Dr. Pablo Martínez Olmos
- Universidad Carlos III de Madrid** Sep. 2016 - Jul. 2018
M.Sc. in Telecommunications Engineering
Dissertation with highest mark

	<p>Universidad Carlos III de Madrid <i>M.Sc. in Multimedia and Communications</i> <i>Dissertation with highest mark</i> <i>One course with honors</i></p>	Sep. 2016 - Jul. 2018
	<p>Universidad de Granada <i>B.Sc. in Telecommunications Engineering</i> <i>Five courses with honors</i></p>	Sep. 2012 - Jul. 2016
TEACHING	<p><i>Advanced Machine Learning</i> BBVA, Fundación UC3M</p>	2023
	<p><i>Intermediate Machine Learning and Feature Engineering</i> BBVA, Fundación UC3M</p>	2022 - Present
	<p><i>Machine Learning Fundamentals</i> BBVA, Fundación UC3M</p>	2020-Present
	<p><i>Machine Learning II</i> Bachelor in Data Science and Engineering Teaching evaluation survey: 4.67/5 (2020), 4.63/5 (2022) Universidad Carlos III de Madrid</p>	2020, 2022
	<p><i>Neural Networks</i> Bachelor in Data Science and Engineering Teaching evaluation survey: 4.13/5 Universidad Carlos III de Madrid</p>	2022
	<p><i>Communications Theory</i> Bachelor in Telecommunications Engineering Bachelor in Sound and Image Engineering Teaching evaluation survey: 3.94/5, 4.14/5 Universidad Carlos III de Madrid</p>	2022
REVIEWING	<p>Artificial Intelligence and Statistics (AISTATS) Selected as Top-10% Reviewer (2023)</p>	2022 - Present
	<p>Journal of Machine Learning Research (JMLR)</p>	2022 - Present
	<p>Journal of Biomedical and Health Informatics (JBHI)</p>	2018 - Present
	<p>Workshop on Deep Generative Models for Health (DGM4H)</p>	2023

CONFERENCE
PUBLICATIONS

- 2023 B. Koyuncu, P. Sánchez-Martín, **I. Peis**, P. M. Olmos and I. Valera. **Variational Mixture of HyperGenerators for Learning Distributions Over Functions**. *Proceedings of the 40th International Conference on Machine Learning, in Proceedings of Machine Learning Research 202:17660-17683*, 2023.
[pdf] [code] [video] [poster]
- 2022 **I. Peis**, C. Ma and J. M. Hernández-Lobato. **Missing Data Imputation and Acquisition with Deep Hierarchical Models and Hamiltonian Monte Carlo**. In *Advances in Neural Information Processing Systems 35 (NeurIPS)*, 2022.
[pdf] [code] [slides] [video] [poster]
- 2016 **I. Peis**, I. A. Illán, F. J. Martínez-Murcia, F. Segovia, J. M. Górriz, J. Ramírez, E. W. Lang & D. Salas-Gonzalez. **MRI brain segmentation using hidden Markov random fields with alpha-stable distributions**. In *IEEE Nuclear Science Symposium, Medical Imaging Conference and Room-Temperature Semiconductor Detector Workshop (NSS/MIC/RTSD)* (pp. 1-3). IEEE, 2016.
[html]

JOURNAL
PUBLICATIONS

- 2022 **I. Peis**, P. M. Olmos and A. Artés-Rodríguez. **Unsupervised Learning of Global Factors in Deep Generative Models**. In *Pattern Recognition, vol. 134, p. 109130*, 2022.
[pdf] [code]
- 2020 **I. Peis**, J. D. López-Moríñigo, M. M. Pérez-Rodríguez, M. L. Barrigón, M. Ruiz-Gómez, A. Artés-Rodríguez and E. Baca-García. **Actigraphic recording of motor activity in depressed inpatients: a novel computational approach to prediction of clinical course and hospital discharge**. In *Scientific reports, 10*. Nature, 2020.
[pdf]
- 2019 **I. Peis**, P. M. Olmos, C. Vera-Varela, M. L. Barrigón, P. Courtet, E. Baca-García and A. Artés Rodríguez. **Deep Sequential Models for Suicidal Ideation from Multiple Source Data**. In *Journal of Biomedical and Health Informatics, vol. 23, no. 6*. IEEE, 2019.
[pdf] [html]
- 2017 D. Castillo-Barnes, **I. Peis**, F. J. Martínez-Murcia, F. Segovia, I. A. Illán, J. M. Górriz, J. Ramírez, D. Salas-Gonzalez. **A Heavy Tailed Expectation Maximization Hidden Markov Random Field Model with Applications to Segmentation of MRI**. In *Frontiers in Neuroinformatics, 11, 66*, 2017.
[pdf]

TALKS	<p><i>Variational Mixture of HyperGenerators for Learning Distributions Over Functions</i></p> <p>Andaluz.IA forum [slides]</p> <p><i>Information Acquisition and Distributions of Functions with Deep Generative Models</i></p> <p>Pioneer Centre for Artificial Intelligence, Copenhagen, Denmark [slides]</p> <p><i>Missing Data Imputation and Acquisition with Deep Hierarchical Models and Hamiltonian Monte Carlo</i></p> <p>Oral (video) and poster presentation NeurIPS22, New Orleans, USA [slides] [video] [poster]</p> <p><i>Missing Data Imputation and Acquisition with Deep Hierarchical Models and Hamiltonian Monte Carlo</i></p> <p>Signal Processing Group Universidad Carlos III de Madrid</p> <p><i>Deep Sequential Models for Suicidal Ideation from Multiple Source Data</i></p> <p>Signal Processing Group Universidad Carlos III de Madrid</p>	<p>Dec. 2023</p> <p>Jun. 2023</p> <p>Dec. 2022</p> <p>Jun. 2022</p> <p>Jul. 2018</p>
AWARDS	<p><i>Outstanding PhD Thesis Award</i> <i>Universidad Carlos III de Madrid</i></p> <p><i>Postdoc Fellowship Award</i> <i>Danish Data Science Academy</i> <i>Novo Nordisk Foundation</i></p>	<p>2023</p> <p>2023</p>
GRANTS	<p>FPU grant to fund doctoral internships <i>Spanish Ministry of Education</i></p> <p>FPU (<i>Formación de Profesorado Universitario</i>) grant to fund doctoral studies <i>Spanish Ministry of Education</i></p>	<p>2021</p> <p>2019</p>
COURSES	<p>AI and Machine Learning in Healthcare Summer School <i>Cambridge Centre for AI in Medicine</i> <i>University of Cambridge, UK</i></p>	<p>Sep. 2022</p>

Gaussian Process and Uncertainty Quantification Summer School, 2020. <i>University of Sheffield, UK</i>	Sep. 2020
Machine Learning Summer School (MLSS) <i>Skoltech Institute of Science and Technology, Moscow, Russia</i>	Sep. 2019
Machine Learning Frontiers in Precision Medicine (MLFPM) 1st Summer School <i>ETH Zurich, Switzerland</i>	Sep. 2019
Machine Learning Summer School (MLSS) <i>Universidad Autónoma de Madrid, Spain</i>	Sep. 2018
Gaussian Process and Uncertainty Quantification Summer School, 2017. <i>University of Sheffield, UK</i>	Sep. 2017

DISSERTATIONS	I. Peis. Advanced Inference and Representation Learning Methods in Variational Autoencoders. <i>PhD Thesis Dissertation (Probabilistic Machine Learning), 2023.</i> [pdf] [slides]
	I. Peis. Deep sequential models with attention for psychiatric patients clinical assessment. <i>M.Sc. Thesis Dissertation (Multimedia and Communications), 2018.</i>
	I. Peis. Activity monitoring in depressed patients in the hospital setting: a pilot study testing new methods of actigraphy data analysis for predicting clinical progress and date of hospital discharge. <i>M.Sc. Thesis Dissertation (Telecommunications Engineering), 2018.</i>
	I. Peis. Hidden Markov Random Fields with alpha-stable distributions for brain Magnetic Resonance Images. <i>B.Sc. Thesis Dissertation (Telecommunications Engineering), 2016.</i>

LANGUAGES	Spanish Mother tongue
	English Advanced

PROGRAMMING SKILLS	Main Languages	PYTHON, MATLAB, C, JAVA
	Frameworks	PYTORCH, TENSORFLOW, SKLEARN, STAN
	Others	R, C++, SQL, HTML, JAVASCRIPT, CSS3