

# Ignacio Peis

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## Technical University of Denmark, DTU

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POSITIONS	<b>Technical University of Denmark, DTU</b> <i>Postdoctoral Researcher</i> Section for Cognitive Systems Dept. of Applied Mathematics and Computer Science (DTU Compute)	Oct. 2023 - Present
	<b>Universidad Carlos III de Madrid</b> <i>Predoctoral Researcher and Teaching Assistant</i> Signal Processing Group Supervisors: Prof. Antonio Artés Rodríguez Dr. Pablo Martínez Olmos	Oct. 2019 - Sept. 2023
	<b>Fundación UC3M</b> <i>Course Instructor</i> Fundamentals, Intermediate and Advanced Machine Learning courses for BBVA employees.	Dec. 2020 - Present
	<b>University of Cambridge</b> <i>Visiting researcher</i> Machine Learning Group Supervisor: Prof. José Miguel Hernández-Lobato	Feb. 2021 - Feb. 2022
	<b>Universidad Carlos III de Madrid</b> <i>Research associate</i> Signal Processing Group Supervisor: Prof. Antonio Artés Rodríguez	Feb. 2017 - Sept. 2019
EDUCATION	<b>Universidad Carlos III de Madrid</b> <i>PhD in Probabilistic Machine Learning</i> Advisors: Prof. Antonio Artés Rodríguez Dr. Pablo Martínez Olmos	Oct 2018 - Oct 2023
	<b>Universidad Carlos III de Madrid</b> <i>M.Sc. in Telecommunications Engineering</i> <i>Dissertation with highest mark</i>	Sept. 2016 - Jul. 2018
	<b>Universidad Carlos III de Madrid</b> <i>M.Sc. in Multimedia and Communications</i> <i>Dissertation with highest mark</i> <i>One course with honors</i>	Sept. 2016 - Jul. 2018

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

CONFERENCE  
PUBLICATIONS

- 2023 B. Koyuncu, P. Sánchez, **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-Morínigo, 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 *Information Acquisition and Distributions of Functions with Deep Generative Models*

Jun. 2023

**Pioneer Centre for Artificial Intelligence, Copenhagen, Denmark**

[slides]

*Missing Data Imputation and Acquisition with Deep Hierarchical Models and Hamiltonian Monte Carlo*

Dec. 2022

Oral (video) and poster presentation

**NeurIPS22, New Orleans, USA**

[slides] [video] [poster]

*Missing Data Imputation and Acquisition with Deep Hierarchical Models and Hamiltonian Monte Carlo*

Jun. 2022

Signal Processing Group

**Universidad Carlos III de Madrid**

*Deep Sequential Models for Suicidal Ideation from Multiple Source Data*

Jul. 2018

Signal Processing Group

**Universidad Carlos III de Madrid**

**COURSES**

**AI and Machine Learning in Healthcare Summer School**

Sep. 2022

*Cambridge Centre for AI in Medicine*

*University of Cambridge, UK*

**Gaussian Process and Uncertainty Quantification Summer School, 2020.**

Sep. 2020

*University of Sheffield, UK*

**Machine Learning Summer School (MLSS)**

Sep. 2019

*Skoltech Institute of Science and Technology, Moscow, Russia*

**Machine Learning Frontiers in Precision Medicine (MLFPM) 1st Summer School**

Sep. 2019

*ETH Zurich, Switzerland*

**Machine Learning Summer School (MLSS)**

Sep. 2018

*Universidad Autónoma de Madrid, Spain*

**Gaussian Process and Uncertainty Quantification Summer School, 2017.**

Sep. 2017

*University of Sheffield, UK*

**DISSERTATIONS**

I. Peis. **Advanced Inference and Representation Learning Methods in Variational Autoencoders.** *PhD Thesis Dissertation (Probabilistic Machine Learning), 2023.* [pdf] [slides]

I. Peis. **Deep sequential models with attention for psychiatric patients clinical assessment.** *M.Sc. Thesis Dissertation (Multimedia and Communications), 2018.*

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.** *M.Sc. Thesis Dissertation (Telecommunications Engineering), 2018.*

I. Peis. **Hidden Markov Random Fields with alpha-stable distributions for brain Magnetic Resonance Images.** *B.Sc. Thesis Dissertation (Telecommunications Engineering), 2016.*

GRANTS	<i>Postdoc Fellowship</i>	2023
	<i>Danish Data Science Academy</i>	
	<i>Novo Nordisk Foundation</i>	
	FPU granted to fund doctoral internships	2021
	<i>Spanish Ministry of Education</i>	
	FPU ( <i>Formación de Profesorado Universitario</i> ) granted to fund doctoral studies	2019
	<i>Spanish Ministry of Education</i>	

LANGUAGES	<b>Spanish</b>	Mothertongue
	<b>English</b>	Advanced

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