Ignacio **Peis**

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Google Scholar page

Positions

Universidad Carlos III de Madrid — Oct. 2019 - Present
Predoctoral Researcher and Teaching Assistant
Signal Processing Group
Supervisors: Prof. Dr. 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: Dr. José Miguel Hernández-Lobato

Universidad Carlos III de Madrid — Feb. 2017 - Sept. 2019
Research associate
Signal Processing Group
Supervisor: Prof. Dr. Antonio Artés Rodríguez

Education

Universidad Carlos III de Madrid — Oct. 2018 - Present
PhD in Probabilistic Machine Learning
Advisors: Prof. Dr. Antonio Artés Rodríguez
Dr. Pablo Martínez Olmos

Universidad Carlos III de Madrid — Sep. 2016 - Jul. 2018
M.Sc. in Multimedia and Communications
M.Sc. in Telecommunications Engineering
Two dissertations with highest mark
One course with honors

Universidad de Granada — Sep. 2012 - Jul. 2016
B.Sc. in Telecommunications Engineering
Five courses with honors

Teaching

Advanced Machine Learning — 2023
BBVA, **Fundación UC3M**

Intermediate Machine Learning and Feature Engineering — 2022 - Present
BBVA, **Fundación UC3M**

Machine Learning Fundamentals — 2020-Present
BBVA, **Fundación UC3M**

Machine Learning II — 2020, 2022
Bachelor in Data Science and Engineering
Universidad Carlos III de Madrid

Neural Networks — 2022
Bachelor in Data Science and Engineering
Universidad Carlos III de Madrid

Communications Theory — 2022
Bachelor in Telecommunications Engineering
Bachelor in Sound and Image Engineering
Universidad Carlos III de Madrid

Reviewing

Artificial Intelligence and Statistics (AISTATS) — 2022
Selected as **Top-10% Reviewer**

Journal of Machine Learning Research (JMLR) — 2022 - Present

Journal of Biomedical and Health Informatics (JBHI) — 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**. *International Conference of Machine Learning, vol. 40*, 2023. [accepted] [pdf]

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] [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]

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

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.*

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

FPU granted to fund doctoral internships 2021
Spanish Ministry of Education

FPU (*Formación de Profesorado Universitario*) granted to fund doctoral studies 2019
Spanish Ministry of Education

Languages

Spanish Mothertongue
English Advanced

Programming Skills

Main Languages	Python, Matlab, C, Java
Frameworks	PyTorch, TensorFlow, sklearn, Stan
Others	R, C++, SQL, HTML, Javascript, CSS3