Ignacio **Peis**

Technical University of Denmark, DTU
Dept. of Applied Mathematics and Computer Science
Section for Cognitive Systems
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Website: `https://ipeis.github.io/`
Google Scholar

Positions

Technical University of Denmark, DTU — Oct. 2023 - Present
Postdoctoral Researcher
Section for Cognitive Systems
Dept. of Applied Mathematics and Computer Science (DTU Compute)

Intor.AI — Nov. 2024 - Present
AI Researcher

EBIS Business School — Oct. 2024 - Present
Lecturer
Master in Data Science and Artificial Intelligence

Fundación UC3M & BBVA — Dec. 2020 - Dec. 2024
Instructor
Fundamentals, Intermediate and Advanced Machine Learning courses for BBVA employees

Universidad Carlos III de Madrid — Oct. 2019 - Sept. 2023
Predoctoral Researcher & Teaching Assistant
Signal Processing Group
Supervisors: Prof. Antonio Artés Rodríguez
Dr. Pablo Martínez Olmos

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

Affiliations

Pioneer Centre for Artificial Intelligence — Nov 2023 - Present
Postdoc

Danish Data Science Academy — Oct 2023 - Present
Postdoc Fellow

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

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

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

Awards & Distinctions

Best Reviewer Award — 2025
International Conference on Artificial Intelligence and Statistics (**AISTATS**)

Selected as **Top Reviewer** — 2024
Neural Information Processing Systems (**NeurIPS**)

Selected as **Top-10% Reviewer** — 2023
International Conference on Artificial Intelligence and Statistics (**AISTATS**)

Outstanding PhD Thesis Award — 2023
Universidad Carlos III de Madrid
PhD Defense Committee:
Dr. Daniel Hernández Lobato, UAM
Dr. Francisco R. Ruiz, Google Deepmind
Prof. Fernando Pérez Cruz, ETH, SDSC

Postdoc Fellowship — 2023
Danish Data Science Academy
Novo Nordisk Foundation

Conference Publications

2025 **I. Peis**, B. Koyuncu, I. Valera and J. Frellsen. **Hyper-Transforming Latent Diffusion Models**. *Proceedings of the 42nd International Conference on Machine Learning, in Proceedings of Machine Learning Research*, 2025.
[pdf] [code]

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 (NeurIPS) 35: 35839-35851*, 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]

Preprints

2024 B. James, S. Pollok, **I.Peis**, J. Frellsen and R. Bjørk. **Scalable physical source-to-field inference with hypernetworks**. *arXiv preprint arXiv:2405.05981*, 2024.
[pdf]

Talks

Hyper-Transforming Latent Diffusion Models — Jun. 2025
Section for Cognitive Systems
[slides]

Hyper-Transforming Latent Diffusion Models — Apr. 2025
CITIC, Universidad de Granada
[slides]

Variational Mixture of HyperGenerators for Learning Distributions Over Functions — Dec. 2023
Andaluz.IA forum
[slides]

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

Teaching

Data Mining, Machine Learning and Deep Learning — 2024
M.Sc. in Data Science and Artificial Intelligence
EBIS, **EUNEIZ**, **Microsoft**

Intermediate Machine Learning and Feature Engineering — 2022 - 2024
BBVA, **Fundación UC3M**

Advanced Machine Learning — 2023 - 2024
BBVA, **Fundación UC3M**

Intermediate Machine Learning and Feature Engineering — 2022 - 2024
BBVA, **Fundación UC3M**

Machine Learning Fundamentals — 2020 - 2024
BBVA, **Fundación UC3M**

Machine Learning II — 2020, 2022
Bachelor in Data Science and Engineering
Teaching evaluation survey: 4.67/5 (2020), 4.63/5 (2022)
Universidad Carlos III de Madrid

Neural Networks — 2022
Bachelor in Data Science and Engineering
Teaching evaluation survey: 4.13/5
Universidad Carlos III de Madrid

Communications Theory — 2022
Bachelor in Telecommunications Engineering
Bachelor in Sound and Image Engineering
Teaching evaluation survey: 3.94/5, 4.14/5
Universidad Carlos III de Madrid

Reviewing

The European Conference on Artificial Intelligence (**ECAI**) — 2025 - Present

Workshop on Neural Network Weights as a New Data Modality (**ICLR**) — 2025 - Present

International Conference on Machine Learning (**ICML**) — 2025 - Present

Transactions on Machine Learning Research (**TMLR**) — 2025 - Present

International Conference on Learning Representations (**ICLR**) — 2024 - Present

Neural Information Processing Systems (**NeurIPS**) — 2024 - Present
Selected as **Top Reviewer** (2024)

	Association for Uncertainty in Artificial Intelligence (**UAI**)	2024 - Present
	Artificial Intelligence and Statistics (**AISTATS**) Selected as **Top-10% Reviewer** (2023) **Best Reviewer Award** (2025)	2022 - Present
	Journal of Machine Learning Research (**JMLR**)	2022 - Present
	Journal of Biomedical and Health Informatics (**JBHI**)	2018 - Present
	Workshop on Deep Generative Models for Health (**DGM4H**)	2023

Projects

INR-Gen: ***"Impicit Neural Representations Generative Modelling"*** Principal Investigator Budget: DKK 1.200.000,00 *Danish Data Science Academy & Novo Norkisk Foundation, Denmark*	2023-2026
PRACTICO-CM: ***"Psiquiatría Computacional y Modelos Integrales de Comportamiento"*** Research team member Budget: 645.775,90 € *Consejería de Educación e Investigación, CAM, Spain*	2019 - 2022
"Aprendizaje máquina y computación masiva para medicina personalizada y análisis cuantitativo del clima" Research team member Budget: 124.509,00 € *Agencia Estatal de Investigación (AEI), Spain*	2019 - 2022
"Métodos computacionales bayesianos avanzados pare estimación, predicción y control en sistemas multisensoriales complejos" Research team member Budget: 314.600,00 € *Ministerio de Economía, Comercio y Empresa, Spain*	2016 - 2019
"Modelos profundos y explicables basados en variables latentes para salud mental" Research team member Budget: 190.212,00 € *Agencia Estatal de Investigación (AEI), Spain*	2022 - 2025

Grants

FPU grant to fund doctoral internships 2021
Spanish Ministry of Education

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

Courses

Model Parallelism: Building and Deploying Large Neural Networks Oct. 2024
NVIDIA

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.*

Programming Skills

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

Last updated: June 4, 2025