

Luis A. Ortega

✉ luisortegaandres@gmail.com • 🌐 ludvins.github.io • in ludvins
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Experience

Postdoctoral Researcher , <i>University of Aalborg</i> , Copenhaguen	2026 – Present
Teaching Assistant and Research Personnel , <i>Autonomous University of Madrid</i> Ph.D. student with Daniel Hernández Lobato as Supervisor. Teaching Python programming fundamentals (Bachelors) and Bayesian methods (Masters).	11/2021 – 11/2025
Visitor Researcher , <i>University of Cambridge</i> Research on Uncertainty Estimation on Large Language Models with José Miguel Hernández Lobato.	09/2023 – 12/2023
Research Assistant , <i>University of Almería</i> Worked with Andrés R. Masegosa studing the effect of diversity on Deep Neural Network ensembles.	02/2021 – 12/2021

Publications

Scalable Linearized Laplace Approximation via Surrogate Neural Kernel Luis A Ortega , Simón Rodríguez-Santana and Daniel Hernández-Lobato	ESANN 2026 [PDF] [Code]
Improving the Linearized Laplace Approximation via Quadratic Approximations Pedro Jiménez, Luis A Ortega , Pablo Morales-Álvarez and Daniel Hernández-Lobato	ESANN 2026 [PDF] [Code]
A Large Deviation Theory Analysis on the Implicit Bias of SGD Luis A. Ortega and Andrés R. Masegosa	Neurocomputing 2026 [PDF] [Code]
PAC-Chernoff Bounds: Understanding Generalization in the Interpolation Regime JAIR & ECAI 2025 Andrés R. Masegosa and Luis A. Ortega	[PDF] [Code]
PAC-Bayes-Chernoff Bounds for Unbounded Losses Ioar Casado, Luis A. Ortega , Aritz Pérez and Andrés R. Masegosa	NeurIPS 2024 [PDF]
Variational Linearized Laplace Approximation for Bayesian Deep Learning Luis A. Ortega , Simón Rodríguez-Santana and Daniel Hernández-Lobato	ICML 2024 [PDF] [Code]
The Cold Posterior Effect Indicates Underfitting Yijie Zhang, Yi-Shan Wu, Luis A. Ortega and Andrés R. Masegosa	TMLR 2024 [PDF] [Code]
Deep Variational Implicit Processes Luis A. Ortega , Simón Rodríguez-Santana and Daniel Hernández-Lobato	ICLR 2023 [PDF] [Code]
Diversity and Generalization in Neural Network Ensembles Luis A. Ortega , Rafael Cabañas and Andrés R. Masegosa	AISTATS 2022 [PDF] [Code]

Ongoing Research

Fixed-Mean Gaussian Processes for ad-hoc Bayesian Deep Learning (under review) Converting models to Bayesian by creating a Gaussian Process with fixed predictive mean to that model.	[Draft]
Regularization as Estimation, A PAC-Bayes-Chernoff Approach A prescriptive framework, grounded in PAC-Bayes-Chernoff bounds, that reframes regularization as a statistical estimation problem.	
Revisiting the Marginal Likelihood through a PAC-Bayesian lens While marginal likelihood remains a critical component, generalization in Bayesian models depends on additional factors beyond marginal likelihood alone.	

Education

Ph.D. Student , <i>Autonomous University of Madrid</i> Thesis: <i>Uncertainty Estimation and Generalization Bounds for Modern Deep Learning</i>	11/2021 – 11/2025
B.S. in Physics , <i>National Distance Education University</i>	2024 – 202X
M.S. in Data Science , <i>Autonomous University of Madrid</i> Master Thesis: <i>Deep Variational Implicit Processes</i>	2020 – 2022
B.S. in Computer Science , <i>University of Granada</i>	2015 – 2020
B.S. in Mathematics , <i>University of Granada</i>	2015 – 2020

Honors & Awards

Granted Santander-UAM Scholarship. Uncertainty Estimation in LLM at Cambridge University. Computational and Biological Learning Lab, University of Cambridge	2023
Granted FPI-UAM Scholarship. Competitive Predoctoral Contract for Training Research Personnel	2021

Department of Computer Science, Autonomous University of Madrid

Research Collaboration Scholarship

Department of Computer Science, Autonomous University of Madrid

2020

Granted Highest Mark on Bachelor's Thesis, 10/10. Statistical Models with Variational Methods

Department of Computer Science and Faculty of Science, University of Granada

2020

Open Source Contributions

Ludvins/Bayesipy | ★19

Full post-hoc suite that includes Variational (VaLLA) and Nyström (ELLA) LLA variants, FMGPs, SNGPs abd MFVI. Along with loaderrs for benchmarking on pre-defined data and models.

2025

AlexImmer/Laplace | ★441

Implemented Functional (GP) Laplace.

2024

libreim/apuntesDGIIM | ★79

Divulgation group destinated to the double degree in computer science and mathematics, Granada.

2017

Skills

Technical Python, C++, PyTorch, TensorFlow, Keras and JAX (little)

Soft Skills Quick learner, Multi-tasking, Cooperative and Collaborative