

Diego Mesquita

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Education	Aalto University, Finland Ph.D. in Computer Science I have worked on Bayesian methods to combine information from different sources (e.g. meta-analysis and federated learning) and I also have done methodological research in graph neural networks. Supervisor: Samuel Kaski. Federal University of Ceara, Brazil M.Sc. in Computer Science During my masters, most of my research revolved around methodologies to handle missing data. Supervisor: João Paulo Pordeus Gomes. Federal University of Ceara, Brazil B.Sc. in Computer Science	November 2021 July 2017 December 2016
Selected works	Embarrassingly parallel MCMC using deep invertible transformations Diego Mesquita, Paul Blomstedt and Samuel Kaski tl;dr: Distributed computing and normalizing flows meet for blazingly fast Bayesian inference. Our method has constant communication cost and outperforms divide-and-conquer MCMC alternatives for a variety of models, including ones with multi-modal and high-dimensional posteriors. Rethinking Pooling in graph neural networks Diego Mesquita, Amauri Holanda and Samuel Kaski tl;dr: We extricate the role of pooling in graph neural networks (GNNs). We find that i) it generally does not lead to better performance on graph classification tasks; and ii) convolutions do the heavy weightlifting. Our results suggest the the GNN community needs to rethink evaluation protocols. Learning GPLVM with arbitrary kernels using the unscented transformation Daniel Souza, Diego Mesquita, Cesar Mattos, João Gomes tl;dr: We propose using the Unscented Transform (UT) for flexible inference on Gaussian Process Latent Variable Models (GPLVMs). The UT performs and scales better than the Gauss-Hermite quadrature, a standard in GPLVM toolboxes. Federated stochastic gradient Langevin dynamics Khaoula el Mekkaoui, Diego Mesquita, Paul Blomstedt, and Samuel Kaski tl;dr: We extend the well-known stochastic gradient Langevin dynamics (SGLD) to cope with federated settings (e.g., data scattered across smartphones). When data partitions are highly heterogeneous, our method substantially outperforms the prior art. Overall count: 1 NeurIPS + 2 UAI + 1 AISTATS + others. Full list in my Google scholar profile	UAI 2019 NeurIPS 2020 AISTATS 2021 UAI 2021
Competitive funding	Funding for exceptionally qualified doctoral students Funding for master students (awarded to top candidates) Science without borders (visiting student at the University of Alberta) Young talents for Science	HICT, 2017-2021 CNPq, 2016-2017 CAPES, 2013-2014 CAPES, 2012-2013
Work	Doctoral researcher Undergraduate research assistant Undergraduate teaching assistant	Aalto University, 2017-present CNPq, 2015-2016 Federal University of Ceara, 2013-2013
Leadership	Supervised 3 Bachelor of Science thesis President of the Computer Science students' union	Aalto University, 2019-2020 Federal University of Ceara, 2015
Misc.	Languages and frameworks: Python, PyTorch, Stan, C, C++, Matlab	