Scott Pesme

Curriculum Vitae

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scott.pesme@polytechnique.edu
scottpesme
Grenoble, France

Education

2024-	**INRIA Grenoble** Post-doc under the supervision of Julien Mairal.
2019-2024	**École Polytechnique Fédérale de Lausanne** Ph.D. entitled "Deep Learning Theory Through the Lens of Diagonal Linear Networks", supervised by professor Nicolas Flammarion.
2018–2019	**École Normale Supérieure Paris-Saclay** Master Mathématiques Vision Apprentissage (MVA).
2015–2018	**École Polytechnique, Palaiseau** B.Sc. and M.Sc. in applied mathematics.
2013–2015	**Lycée Henri IV, Paris** Preparatory classses in mathematics and physics for the french grandes écoles.

Experience

2023	**RIKEN AIP** · Research exchange (*5 months*) · Tokyo Research stay in professor Taiji Suzuki's laboratory at the University of Tokyo and RIKEN AIP.
2019	**EPFL** · Master thesis (*5 months*) · Lausanne On Convergence-Diagnostic based Step Sizes for Stochastic Gradient Descent.
2018	**McGill University** · Intern at the Montreal Neurological Institute (*4 months*) · Montréal Implementation of new methods for extracting event related brain potentials using neural networks.
2017	**General Electric** · R&D intern (*3 months*) · Grenoble Development of a software program in Python language that predicts the damage of water turbines.
2015	**Paris Fire Brigade** · Military service (*7 months*) · Paris École Polytechnique's mandatory military service as a paramedic team-leader in the fire brigade.

Publications

Implicit Bias of Mirror Flow on Separable Data.
S. Pesme, R-A. Dragomir, N. Flammarion, Neurips 2024.

Leveraging Continuous Time to Understand Momentum When Training Diagonal Linear Networks.
H. Papazov, S. Pesme, N. Flammarion, AISTATS 2024.

Saddle-to-Saddle Dynamics in Diagonal Linear Networks.
S. Pesme, N. Flammarion, Neurips 2023.

(S)GD over Diagonal Linear Networks: Implicit Regularisation, Large Stepsizes and Edge of Stability.
M. Even, S. Pesme, S. Gunasekar, N. Flammarion, Neurips 2023.

Implicit Bias of SGD for Diagonal Linear Networks: a Provable Benefit of Stochasticity.
S. Pesme, L. Pillaud-Vivien, N. Flammarion, Neurips 2021.

Online Robust Regression via SGD on the ℓ_1 loss. S. Pesme, N. Flammarion, Neurips 2020.

On Convergence-Diagnostic based Step Sizes for Stochastic Gradient Descent.
S. Pesme, A. Dieuleveut, N. Flammarion, ICML 2020.

Teaching Assistant

Machine Learning and Optimisation for ML courses at EPFL.
Mathematics and physics examiner at Lycée Henry IV preparatory classes.