# Scott Pesme

## Curriculum Vitae

March 2024

scott.pesme@epfl.ch
scottpesme
Lausanne, Switzerland

## Education

2019-2024 | **École Polytechnique Fédérale de Lausanne**
Ph.D. in the Theory of Machine Learning laboratory supervised by Prof. 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 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

**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 $\ell_1$ 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

Teaching assistant for the Machine Learning and Opimisation for ML courses at EPFL.
Mathematics and physics examiner at Lycée Henry IV preparatory classes.

## Skills

Languages | Python, Matlab, Java, C++, R.

## Languages

French (mother-tongue) · English (C2) · Spanish (B1)