Guillaume Wang

Updated October 26, 2024

guillaume.wang@epfl.ch guillaumew16.github.io +33 6 95 86 65 87

Research interests

Optimization, theory of machine learning, optimal transport

Education

EPFL — Lausanne, Switzerland
PhD in Mathematics — 2021 – present
GPA: 5.71 (max: 6, min: 1)
Advisor: Lénaïc Chizat

ETH Zurich — Zurich, Switzerland
MSc in Computer Science — 2019 – 2021
GPA: 5.80 (max: 6, min: 1)

École polytechnique — Paris-Saclay, France
Cycle Ingénieur polytechnicien — 2016 – 2019
(Applied Mathematics, Computer Science)
GPA: 3.87 out of 4

Publications
(* = equal contribution)

A higher-order Otto calculus approach to the Gaussian completely monotone conjecture
Guillaume Wang
arXiv preprint, 2024

Mean-field Langevin dynamics for signed measures via a bilevel approach
Guillaume Wang*, Alireza Mousavi-Hosseini*, Lénaïc Chizat
arXiv preprint, 2024. To appear as NeurIPS 2024 spotlight

Open problem: Convergence of single-timescale mean-field Langevin descent-ascent for two-player zero-sum games
Guillaume Wang, Lénaïc Chizat
The Thirty Seventh Annual Conference on Learning Theory (COLT), 2024

Local convergence of gradient methods for min-max games under partial curvature
Guillaume Wang, Lénaïc Chizat
Advances in Neural Information Processing Systems (NeurIPS), 2023

An exponentially converging particle method for the mixed Nash equilibrium of continuous games
Guillaume Wang, Lénaïc Chizat
arXiv preprint, 2022. To appear in Open Journal of Mathematical Optimization

Tight bounds for minimum ℓ_1-norm interpolation of noisy data
Guillaume Wang*, Konstantin Donhauser*, Fanny Yang
International Conference on Artificial Intelligence and Statistics (AISTATS), 2022

Research experience

Internship at **Statistical Machine Learning group** (ETH Zurich) Summer 2021
Mentor: Fanny Yang

Teaching experience

Teaching assistant, Section de Mathématiques (EPFL) (* = head TA)

*Analysis 2 (sections GC SIE)	Spring 2022
*MATH-101(g): Analysis 1	Fall 2022
*MATH-450: Numerical Integration of SDEs	Spring 2023
MATH-101(g): Analysis 1	Fall 2023
*MATH-105(a): Analysis 2	Spring 2024
*MATH-100(a): Analysis 1	Fall 2024

Bachelor & Master semester projects supervision (EPFL) 2022 – present

Talks and tutorials

An exponentially converging particle method for the mixed Nash equilibrium of continuous games March 2023
SIGOPT 2023 International Conference on Optimization (Cottbus, Germany)

From optimal transport to Wasserstein gradient descent for optimization and sampling November 2023
Internal FLAIR tutorial (EPFL)

Skills

Programming
Proficient in Python, Julia
Experience with Java, C, C++, Caml

Languages
French, Chinese (native); English (fluent); German (conversational)

Service

Reviewing
Journal of Machine Learning Research, Mathematics of Operations Research, Optimal Transport and Machine Learning workshop (NeurIPS 2023), NeurIPS 2024

Student life at EPFL
Webmaster of the EPFL SIAM student chapter (Society for Industrial and Applied Mathematics) 2022-2024