

Nidham Joseph **Gazagnadou**

RESEARCH SCIENTIST IN PRIVACY-PRESERVING MACHINE LEARNING

☎ +33 (0) 6 48 45 41 79 | Address: 9 rue Barbès, 94200 Ivry-sur-Seine, FRANCE

✉ nidham.gazagnadou@gmail.com | 🏠 ngazagna.github.io/ | 🌐 ngazagna

Professional Experience

Sony AI, Privacy-Preserving Machine Learning team. RESEARCH SCIENTIST

Paris, France

RESEARCH INTERESTS: TRUSTWORTHY AI, FEDERATED LEARNING, COMPUTER VISION

Apr. 2022 - Now

ANONYMIZATION, ON-DEVICE MACHINE LEARNING

- **Publications** (* denotes equal contribution)
 - Y. Deng*, **N. Gazagnadou***, J. Hong, M. Mahdavi, L. Lyu. On the Hardness of Robustness Transfer: A Perspective from Rademacher Complexity over Symmetric Difference Hypothesis Space. *preprint (under review)*, 2023
- **Academic services:** Reviewer for NeurIPS 2022, ICML 2023 & JMLR

Télécom Paris. PH.D. IN STOCHASTIC OPTIMIZATION FOR MACHINE LEARNING

Paris, France

RESEARCH INTERESTS: STOCHASTIC VARIANCE-REDUCED GRADIENT METHODS,

Apr. 2018 - Dec. 2021

RANDOMIZED ITERATIVE METHODS

- **Publications**
 - Y. Deng, **N. Gazagnadou**, J. Hong, M. Mahdavi, L. Lyu. On the Hardness of Robustness Transfer: A Perspective from Rademacher Complexity over Symmetric Difference Hypothesis Space. *preprint (under review)*, 2023
 - R. M. Gower, M. Blondel, **N. Gazagnadou**, F. Pedregosa. Cutting some slack for SGD with adaptive Polyak stepsizes. *preprint (under review)*, 2022
 - **N. Gazagnadou**, M. Ibrahim, R. M. Gower. **RidgeSketch**: A Fast sketching based solver for large scale ridge regression. *SIAM Journal on Matrix Analysis and Applications*, 2022
 - **N. Gazagnadou**. Sketched ADI: a randomized iterative method for solving large scale Sylvester matrix equations. *thesis chapter*, 2021
 - O. Sebbouh, **N. Gazagnadou**, S. Jelassi, F. Bach, R. M. Gower. Towards closing the gap between the theory and practice of SVRG. *Advances in Neural Information Processing Systems (NeurIPS)*, 2019
 - **N. Gazagnadou**, R. M. Gower, J. Salmon. Optimal Mini-Batch and Step Sizes for SAGA. *International Conference on Machine Learning (ICML)*, 2019
- **Code projects and packages**
 - **RidgeSketch**: Sketch-and-project methods for solving the ridge problem, Python (jointly with FAIR NY)
 - **StochOpt**: Stochastic optimization methods for solving the ERM, Julia
 - **BenchOpt**: Benchmark of optimization algorithms simple and open source, Python & Julia
- **Funding**
 - 2020: **€5,3k** Mobility fundings to visit Alex Townsend at Cornell University
 - 2019: NeurIPS 2019 Travel Award
 - 2018 - 2021: **€100k** 3-year PhD fellowship, DIM Math Innov, Région Île-de-France
- **Academic services:** Reviewer for NeurIPS conferences in 2020 & 2021 (**Outstanding reviewer award**)
- **Teaching Assistant:** Courses on Optimization and Machine Learning at graduate level. 64 h/year

QuantCube Technology. DATA SCIENTIST INTERN IN CYCLONE FORECASTING

Paris, France

Seasonal forecasts based on oceanographic and weather data

Apr. 2017 - Aug. 2017

HSBC Global Asset Management. FINANCIAL ENGINEERING INTERN

La Défense, France

Modeling and studying investment strategies (reversal/momentum) on multi-asset

Nov. 2016 - Mar. 2017

Education

Télécom Paris. PH.D. IN APPLIED MATHEMATICS

[Paris, France](#)

- Supervision: **Robert M. Gower** and **Joseph Salmon**.
- Interests: Stochastic Variance-Reduction, Randomized Iterative Methods
- Thesis manuscript available [here](#)

2018 - 2021

ENS Cachan, MVA. MS IN APPLIED MATHEMATICS

[Cachan, France](#)

Majors: Mathematics, Machine Learning, Computer Vision. **High honors**

2017 - 2018

ENSTA Paris. DEGREE IN ENGINEERING (EQUIVALENT TO BS AND MS)

[Palaiseau, France](#)

Majors: Optimization, Probability and Statistics. **GPA: 3,99**

2014 - 2018

Lycée Louis le Grand. PREPARATORY PROGRAM

[Paris, France](#)

Two years of intensive training courses for French “Grandes écoles” competitive exams

2012 - 2014

Skills

COMPUTER SCIENCE

Python, PyTorch, TensorFlow, Julia, R, LaTeX

LANGUAGES

French Native

Farsi Intermediate

English Fluent

Arabic Notions

Extracurricular Activity

Institut National des Langues et Civilisations Orientales (INALCO)

[Paris, France](#)

Evening Farsi classes

2018 - 2021