Grégoire Mialon

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Research

2018 - *Now*

Inria & École Normale Supérieure (Paris, France) - PhD student
- Member of Sierra team and Thoth team.
- Main focus: learning with neural networks when labelled data is scarce.
- Also working on Transformers and Causal Inference.
- Advisors: **Pr. Julien Mairal, Pr. Alexandre d'Aspremont**.

2016 (5 months)

Massachussets Institute of Technology (Cambridge, MA) - Research Intern
- Nuclear Science and Engineering, Offshore Floating Nuclear Plant group.
- Built a fast model for predicting damage resulting from ship collisions
using finite elements and high performance computing.
- Advisors: **Pr. Neil Todreas, Pr. Koroush Shirvan.**

Education

2017 - 2018

ENS Paris-Saclay (France) - Msc. Mathematics, Vision and Learning (MVA)
- Founded in 1996, it is the oldest and most prestigious Master's program in
Machine Learning in France.
- Statistical Learning Theory, Deep Learning, NLP.

2013 - 2017

École polytechnique (Palaiseau, France) - Graduate Student
- Founded in 1794, the École polytechnique is the most prestigious Science and
Engineering university in France, with a strong focus on Applied Mathematics.
- Majored in Theoretical Physics.
- Minored in Economics and Business Studies.

2010 - 2013

Lycée du Parc (Lyon, France) - Preparatory Classes: Bachelor level
PCSI-PC*: courses in Mathematics, Physics to prepare top-level science
universities.

Teaching

2018 - 2020

Université Paris-Dauphine (France) - Teacher (M2 MASH)
Python for Data Science and Machine Learning.

2016 - 2017

Lycée Saint-Louis (Paris, France) - Teaching Assistant in Preparatory Classes
Tutored and tested weekly students in physics for nationwide examination.

Job experience

2019 - 2020

Athling (Paris, France) - Consultant
Evaluating the impact of machine learning on commerce and distribution. This
report was commissioned by the french Prospective Observatory for Trade.

2017 - 2018	**eXplain (Paris, France)** - Data Scientist, NLP - eXplain (ex-Liegey Muller Pons) is a company focusing on electoral campaign technology. The company closely worked for the last two winners of the french presidential elections. - Developed and sold an automated press analysis product relying on NLP. - Managers: **Pr. Vincent Pons, Arthur Muller (founders).**
2015 (3 months)	**Ministry for Foreign Affairs (Paris, France)** - Civil Servant Intern - Drafted notes on terrorism for diplomats and political leaders on a mission. - Manager: **Emmanuel Cocher.**

Publications

- G. Mialon*, D. Chen*, M. Selosse* and J. Mairal. GraphiT: Encoding Graph Structure in Transformers *(arXiv)*. Paper.
- G. Mialon*, D. Chen*, A. d'Aspremont and J. Mairal. A Trainable Optimal Transport Embedding for Feature Aggregation and its Relationship to Attention *(ICLR 2021)*. Paper.
- G. Mialon, A. d'Aspremont and J. Mairal. Screening Data Points for Empirical Risk Minimization via Ellipsoidal Regions and Safe Loss Functions *(AISTATS 2020)*. Paper.
- A. Bietti*, G. Mialon*, D. Chen and J. Mairal. A Kernel Perspective for Regularizing Deep Neural Networks *(ICML 2019)*. Paper.

Invited Talks

- DIRO, MILA and Université de Montréal, Virtual, 2021. *Designing Transformers with Kernel Methods.*
- Paris NLP Meetup, Virtual, 2021. *How Natural Language Processing is reshaping Machine Learning.*
- Gatsby Unit, UCL, 2019. *Screening Data Points for Empirical Risk Minimization via Ellipsoidal Regions and Safe Loss Functions.*
- eXplain, Paris, 2019. *Sample Screening in Machine Learning.*

Services

- Currently organizing a reading group on Causal Inference for Inria.
- Reviewing: Neurips 2020 (Pre-registration experiment), 2021.

Past projects

- Data Challenge: Predicting cancer from DNA for Stéphane Mallat's Curse of Dimensionality course 2018 (ranked first decile).
- Built a Tweet normalizer and a Parser for Emmanuel Dupoux's NLP course.
- Data Challenge: Paris RAMP Drug Test Challenge 2017 (ranked first decile).

Awards and Fellowships

2016	**EDF Énergies nouvelles Fellowship** - for pursuing research at MIT.
2016	**École polytechnique Outstanding Investment** - for involvment in the campus life and in a microfinance non-profit organization.