

Master 2 Data Science, IP Paris Optimisation for Data Science

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INSTITUT
POLYTECHNIQUE
DE PARIS



Main informations

- Volume: 6 ECTS, (12 weeks + exam)
- 3h30 courses alternated (50% course + 50% Lab), depending on the week
- Always come with your laptops!
- Install the **anaconda** Python **distribution** on your laptop (ships Python with all main librairies + jupyter)
- Use **moodle** for sharing material & submitting your work
- Only **enrolled** students get a grade

Teaching team

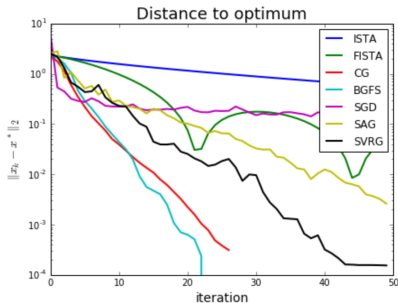
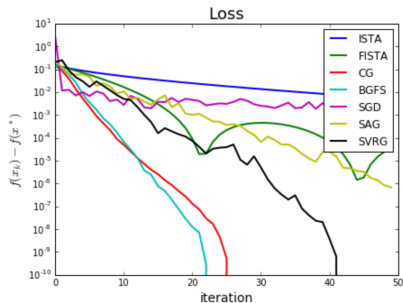
- Rémi FLAMARY, École polytechnique,
`remi.flamary@polytechnique.edu`
- Alexandre GRAMFORT, Meta AI,
`alexandre.gramfort@gmail.com`
- Extra assistants for the Labs (Matthieu Terris, Joël Garde)

Evaluation

- **Labs.** Your work is to implement optimization algorithms in Python with `jupyter notebook`. You have the full week to finish your work. 30% of the final grade for the course.
- **Project.** Your work is to implement up to 5 alternative algorithms for the same machine learning model. Subject will be given during the course. 30% of the final grade for the course. *Examples of models:* proportional odds, SVM, robust regression etc.
- **Final Exam.** 40% of the final grade for the course

Description

- All machine learning algorithms require training on data
- In most cases, training = minimization of some function
- Basic theoretical background on convex optimization
- Implementation of these algorithms during labs
- Connecting the inherent problem structure to the design of modern algorithms and their analysis



Thank you!