Postdoc and PhD positions at the intersection of optimisation and learning

Where: ENSTA Paris, Optimisation and control department (https://www.ensta-paris.fr/)
What: Fully funded Postdoc and PhD position
When: Starting date: 2024 | positions opened till filled
Topics: convex optimisation, first order algorithms, online learning, kernels, robust optimisation, cyber-physical systems
Contact: andrea.simonetto@ensta-paris.fr (https://perso.ensta-paris.fr/~simonetto/)

General topic: Personalised optimisation for cyber-physical and social systems

The positions are offered in the context of a recently granted national project: Human-O. The Human-O project deals with upgrading current optimization algorithms to the needs of cyber-physical and social system, namely information streams and human presence. The aim is to design novel algorithms that learns how optimization problems evolve in time, due to time-varying conditions, and learns human-specific objectives and constraints to be incorporated in the problem itself. The research steps of the project pertain learning the dynamical system underlying the optimality conditions, incorporating human feedback by designing and learning human-specific costs and constraints, and giving humans an active part in the optimization process.

Topics of interests are: convex optimisation, first order algorithms, online learning, kernels, robust optimisation, cyber-physical systems.

During the project, we plan collaborations with Emiliano Dall'Anese (UC Boulder, USA), Alessandro Rudi (ENS Paris), Lucian Busoniu (TU Cluj-Napoca, Romania). In addition, we will look at applications stemming from smart grids, intelligent transportations, and health.

Candidates. The potential postdoc candidate is required to have a PhD degree (or at the stage of obtaining one) in either optimisation, controls, or machine learning, and a keen interest in the all the above. The potential PhD candidate is required to have a masters' degree (or at the stage of obtaining one) in either optimisation, controls, or machine learning, and a keen interest in the all the above. The candidates are expected to conduct their research with a good degree of initiative and self-drive, both in theory and by coding their solutions in practice, e.g., in python.

Location. ENSTA Paris is one of the oldest engineering schools in France, conveniently located in Palaiseau, south of Paris. ENSTA Paris is a member school of the **Institut Polytechnique de Paris** (https://www.ip-paris.fr/ , #2 university in France, and #21 in Europe as for QS ranking). Its applied mathematics department focuses on optimisation, operations research, controls, and machine learning among other fields. The Institut Polytechnique de Paris is a thriving location for mathematics, optimisation, and machine learning. It is also a founding member of **Hi!Paris** (https://www.hi-paris.fr/) a leading AI institute.

To apply. Send an email to Andrea Simonetto, andrea.simonetto@ensta-paris.fr , with your CV, your motivation letter, and the name of two referees who can provide a reference letter for you.