



CIRRELT

SCALE AI

Séminaire conjoint avec / Joint Seminar with
Chaire de recherche SCALE AI sur les chaînes d'approvisionnement pilotées
par les données / SCALE-AI Chair in Data-Driven Supply Chains

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Chercheur postdoctoral /
Postdoctoral Researcher



Optimization methods for L0-regularized problems

Abstract: L0-regularized arise in various fields, including Machine Learning, Signal Processing, and Statistics, among others. Despite their practical interest, they have not been widely adopted by practitioners since they are NP-hard, and thereby considered too challenging to solve. However, recent contributions from the discrete optimization community have proposed modern solution methods to tackle them, opening new application perspectives. This presentation will review the different families of solutions methods in this vein. Specifically, Mixed-Integer Programming formulations of L0-regularized problems as well as the construction of specialized Branch-and-Bound solvers will be discussed. We will also provide some insights on the ongoing research directions in this field and the different research communities involved.

Bio : Théo Guyard is a Postdoctoral Researcher at Polytechnique Montréal affiliated to the Scale-AI chair held by Thibaut Vidal. Prior to that, he received a PhD in Applied Mathematics at INRIA Rennes under the supervision of Cédric Herzet, Clément Elvira and Ayşe-Nur Arslan, and earned an Engineering Degree (MSc equivalent) specialized in Applied Mathematics from INSA Rennes. His works mainly focus on mathematical optimization with both convex and mixed-integer problems related to machine learning and signal processing applications. In particular, his PhD was focus on developing numerical methods to tackle L0-norm problems.

JEUDI / THURSDAY

**6 mars 2025, 14 h
March 6, 2025, 14:00**

**Pavillon André-Aisenstadt
Salle / Room 5441**

Ouvert à tous / Open to all

Responsable / Organizer

Thibaut Vidal