

Benchopt: reproducible, efficient, and collaborative ML and optimization benchmarks

Thomas Moreau

As novel data-driven regularizers and hybrid optimization methods become increasingly central to solving inverse imaging problems, rigorously evaluating their performance, convergence, and computational complexity is crucial. This tutorial introduces Benchopt, an open-source collaborative framework designed to simplify and standardize the benchmarking of ML and optimization algorithms.

Aligned with the workshop's focus on robustness and computational complexity, we will explore how Benchopt allows researchers to seamlessly compare traditional mathematical solvers with emerging data-driven schemes, such as Plug-and-Play methods or unrolled networks. Participants will learn how to set up reproducible experiments, empirically validate convergence, and assess the computational frugality of different architectures across various datasets. Ultimately, this session will give attendees with the tools to ensure transparent, standardized, and reproducible evaluations within the imaging community.