Benchopt: reproducible, efficient and collaborative optimization benchmarks

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Abstract

Numerical validation is at the core of machine learning research as it allows to assess the actual impact of new methods, and to confirm the agreement between theory and practice. Yet, the rapid development of the field poses several challenges: researchers are confronted with a profusion of methods to compare, limited transparency and consensus on best practices, as well as tedious re-implementation work. As a result, validation is often very partial, which can lead to wrong conclusions that slow down the progress of research. We propose Benchopt, a collaborative framework to automate, reproduce and publish optimization benchmarks in machine learning across programming languages and hardware architectures. Benchopt simplifies benchmarking for the community by providing an off-the-shelf tool for running, sharing and extending experiments. We hope that Benchopt will foster collaborative work in the community hence improving the reproducibility of research findings.

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