Stronger adversaries grow cheaper forests: Online Node-Weighted Steiner Problems

Sander Borst[*1], Marek Eliáš , and Moritz Venzin

[1]Max Planck Institute for Informatics – Germany

Abstract

The online Steiner forest problem is a classical problem in the field of online algorithms. For a long time, we have had an optimal algorithm for this problem, but only in the edge-weighted setting. The node-weighted setting is fundamentally more challenging. We finally propose an algorithm for node-weighted Steiner forest that is essentially optimal. A key ingredient for proving this result is a new adversarial model, called semi-adaptive adversaries. This work will appear in SODA'25.

[*]Speaker