

Seminar AGCO

Speaker: Benjamin Moseley, Carnegie Mellon University.

Title: Combinatorial Optimization Augmented with Machine Learning.

Abstract: Combinatorial optimization often focuses on optimizing for the worst-case. However, the best algorithm to use depends on the "relative inputs", which is application specific and often does not have a formal definition.

The talk gives a new theoretical model for designing algorithms that are tailored to inputs for the application at hand. In the model, learning is performed on past problem instances to make predictions on future instances. These predictions are incorporated into the design and analysis of the algorithm. The predictions can be used to achieve "instance-optimal" algorithm design when the predictions are accurate and the algorithm's performance gracefully degrades when there is error in the prediction.

The talk will apply this framework to applications in online algorithm design and give algorithms with theoretical performance that goes beyond worst-case analysis. The majority of the talk will focus on load balancing on unrelated machines.

<https://zoom.us/j/96038506635?pwd=SWtONW5RWGM2SHhWWIN2RGhWMHZ6UT09>

Password: 743216

Miércoles 23 de Septiembre, **14:30 hrs.**