Machine Learning for Better Combinatorial Algorithms

Sajeeb Roy Chowdhury* and Anton Betten, Colorado State University

Classification of combinatorial objects leads to NP hard problems in Computer Science. One of them is computing orbits of groups acting on sets. These orbits can be represented using Schreier trees. Good Schreier trees are shallow ("short and fat"). There already exists a deterministic algorithm by Seress for generating such trees. In this talk we present another way of generating shallow Schreier trees using machine learning techniques such as deep reinforcement learning.