

Thorsten Mütze, ETH Zurich

Abstract

It has been observed that for certain positional games, the outcome of the game between two optimal players ('clever' vs. 'clever') is the same as if both players played randomly ('random' vs. 'random'), and insights from the probabilistic analysis can be turned into efficient deterministic winning strategies. In this talk I will present a general technique that builds a similar bridge between two previously disconnected areas of research: the world of probabilistic one-player games ('clever' vs. 'random') in which the goal is to avoid some given local substructure and the world of deterministic two-player games ('clever' vs. 'clever'). This link is established by replacing 'randomness' by an adversary who is subject to certain restrictions inherited from the random setting. Exploiting this connection allows us to transfer insights and techniques between the two worlds and to derive new results in each of them. I will demonstrate the strength of this approach by discussing several instances of Ramsey- and Achlioptas-type games where it turned out to be very fruitful.

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