

## The Nisan-Ronen Conjecture

### Speaker

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### Abstract

The Nisan-Ronen conjecture, a central problem in algorithmic game theory, states that no truthful mechanism for makespan-minimization when allocating a set of tasks to  $n$  unrelated machines can have approximation ratio less than  $n$ . Since the class of truthful mechanisms is exactly the class of monotone algorithms, validating the conjecture would provide a strong separation between monotone and non-monotone optimization algorithms. In this talk, I will discuss recent progress on this conjecture. The results are based on studying an interesting special class of instances that can be represented by multi-graphs in which vertices represent machines and edges represent tasks, and each task should be allocated to one of its two incident machines.

