

## **Learning how to rank via forbidden patterns - semirankings and the Erdos-Hajnal Conjecture**

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Assume that we have  $n$  objects that we would like to rank according to some notion of goodness from the best one to the worst one. The ranking problem arises in many applications in computer science and plays a crucial role also in machine learning. It attracted many researchers in the field. Purely combinatorial algorithms as well as those more machine learning-oriented have been designed. In this talk I will propose a new novel way of thinking about the problem of ranking. This new approach outperforms existing methods if the underlying preference-tournament (describing our incomplete information about the relation between objects) is not of very good quality. Surprisingly, some combinatorial and pure graph theory tools related to the celebrated Erdos-Hajnal Conjecture lead to much better understanding of this important setting and may potentially give the most efficient algorithms to give satisfactory solutions.