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Distinguished Lecturer Series



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Greedy Algorithms and the non-monotone submodular maximization problem

Abstract:

We are interested in the following ill-defined problem: What is a conceptually simple algorithm and what is the power and limitations of such algorithms? We won't make much progress on this question but will begin by discussing this general perspective on algorithm design. For the main part, we will restrict attention to greedy (or more generally myopic) algorithms for combinatorial optimization problems. Informally, we say that myopic algorithms consider (in some order) each input item and make an irrevocable (perhaps greedy) decision for the item. As a specific example, we will consider the recent Buchbinder et al "online double sided greedy algorithm" for maximizing a non-monotone submodular function and discuss a precise model for their algorithm and the limitations of algorithms that fall within that model. The talk will be self-contained and will mainly emphasize more the perspective rather than specific results. Joint work with Norman Huang.

**12:00-13:00 on Tuesday, February 11, 2014,
Harry and Carol Saal Auditorium, Alon Building for Hi-Tech (37/202).**