Yaniv Plan  
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will give a talk on  

Binary Matrix Completion  

Abstract  

Suppose you ask each person at this talk to give a positive or negative rating for each seminar talk they have seen at U. Mich. From only this data, and no other data about the talks themselves, how would you guess whether each person would have enjoyed the talks that they did not go to? In other words, there is a matrix in which columns represent people (at this talk) and rows represent the seminars that have occurred at Michigan. A subset of the matrix entries are filled in with +1’s or -1’s. Can you fill in the missing entries? Such questions are central in several applications, in particular recommender systems. In this talk we give a theoretical treatment of the problem which considers maximum likelihood estimation under a low-rank assumption. We assume that the data is generated by a statistical model (e.g., the logistic model) and demonstrate that one may accurately estimate the probability distribution of the unseen entries.