

1106-15-1431 **Sewoong Oh*** (swoh@illinois.edu), 104 S. Mathews Ave, Urbana, IL 61822. *Rank Centrality: Ranking from pairwise comparisons.*

The question of aggregating pairwise comparisons to obtain a global ranking over a collection of objects has been of interest for a very long time. In most settings, in addition to obtaining a ranking, finding ‘scores’ for each object is of interest for understanding the intensity of the preferences. In this talk, we present Rank Centrality, an iterative rank aggregation algorithm for discovering scores for objects from pairwise comparisons. The algorithm has a natural random walk interpretation over the graph of objects with an edge present between a pair of objects if they are compared; the score, which we call Rank Centrality, of an object is assigned according to its stationary probability under this random walk. To study the efficacy of the algorithm, we consider the popular Bradley-Terry-Luce (BTL) model. We use the comparisons theorem for comparing the stationary distribution of two random walks and the concentration inequalities for random matrices to prove an order-optimal dependence on the number of samples. (Received September 15, 2014)