



THE UNIVERSITY OF CHICAGO

COMPUTATIONAL AND APPLIED MATHEMATICS STUDENT SEMINAR

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Delete and Repair for Graphs

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Jones 303, 5747 S. Ellis Avenue

ABSTRACT

The two components for infinite exchangeability of a sequence of distributions (P_n) are (i) consistency, and (ii) finite exchangeability for each n . A consequence of the Aldous Hoover theorem is that node exchangeable, subselection consistent distributions on networks yield random graphs whose expected number of edges grows quadratically in the number of nodes. We consider a different notion of consistency for graphs, namely, delete and repair consistency, motivated by the particular sense in which infinitely exchangeable permutations defined by the Chinese restaurant process (CRP) are consistent. The goal is to exploit delete and repair consistency to obtain a nontrivial sequence of distributions on graphs (P_n) that is sparse, exchangeable, and consistent with respect to delete and repair. An attempt is made toward this goal, but in the end, such a distribution is beyond our grasp.