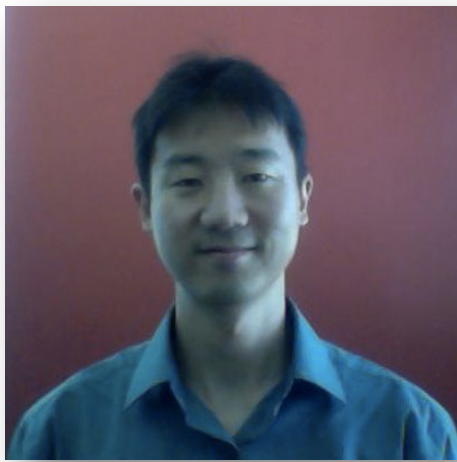




Thursday, Nov. 21

**Hammerschlag Hall
Room B206 at
12:00 p.m.**

Consistency of Co-clustering Exchangeable Graph Data



David Choi
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David Choi is an assistant professor at Heinz college in Carnegie Mellon University. He graduated from Stanford University, in Electrical Engineering, where his advisor was Benjamin Van Roy. He has previously worked as a research scientist at MIT Lincoln Laboratory, and as a postdoc in the School of Engineering at Harvard and in the Department of Statistics at UC Berkeley.

Consistency of Co-clustering Exchangeable Graph Data

We analyze the problem of partitioning a 0-1 array or bipartite graph into subgroups (also known as co-clustering), under a relatively mild assumption that the data is generated by a general nonparametric process. This problem can be thought of as co-clustering under model misspecification; we show that the additional error due to misspecification can be bounded by $O(n^{-1/4})$. Our result suggests that under certain sparsity regimes, community detection algorithms may be robust to modeling assumptions, and that their usage is analogous to the usage of histograms in exploratory data analysis. We also discuss connections to recent literature on exchangeable graph models, graph limits, and graphons.

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