



Statistical Sciences  
UNIVERSITY OF TORONTO

## SEMINAR

October 27, 2016 at 3:30pm

*\*Refreshments will be provided at 3:15pm\**

Sidney Smith Hall, Room 2108

Speaker: Han Liu, Princeton University

Host: Fang Yao

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### Combinatorial Inference

We propose the combinatorial inference to explore the global topological structures of graphical models. In particular, we conduct hypothesis tests on many combinatorial graph properties including connectivity, hub detection, perfect matching, etc. Our methods can be applied to any graph property which is invariant under the deletion of edges. On the other side, we also develop a generic minimax lower bound which shows the optimality of the proposed method for a large family of graph properties. Our methods are applied to the neuroscience by discovering hub voxels contributing to visual memories.

(Joint work with Junwei Lu, Matey Neykov, Kean Ming Tan).