



# THE UNIVERSITY OF CHICAGO

Departments of Computer Science, Mathematics, Statistics and the Computation Institute  
**SCIENTIFIC AND STATISTICAL COMPUTING SEMINAR**

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## SABYASACHI CHATTERJEE

Department of Statistics  
University of Chicago

### On Estimation in the Nonparametric Bradley Terry Model

THURSDAY, January 26, 2017 at 4:30 PM  
226 Jones Laboratory, 5747 S. Ellis Avenue

#### ABSTRACT

We consider the problem of estimating the probabilities of one team beating another after observing an instance of a league tournament where every pair of teams play each other once. Under an assumption of transitivity commonly made in the Psychology literature, we pose this as a formal statistical estimation problem and study a natural computationally efficient estimator. We study risk properties of this estimator in detail and find interesting adaptivity properties of our estimator. We also consider the situation where we only observe only a fraction of games between all pairs of teams.

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#### Organizers:

Lek-Heng Lim, Department of Statistics, [lekheng@galton.uchicago.edu](mailto:lekheng@galton.uchicago.edu)

Ridgway Scott, Departments of Computer Science and Mathematics, [ridg@cs.uchicago.edu](mailto:ridg@cs.uchicago.edu)

Jonathan Weare, Department of Statistics and The James Franck Institute, [weare@uchicago.edu](mailto:weare@uchicago.edu).

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