Mathematics/Statistics
Joint Colloquium
Spring 2017

Random Algorithms in Linear Algebra

Friday, April 7, 2017
Lecture from 4:10 – 5:00pm
With Light Refreshments from 3:30 – 4:10pm
1147 Mathematical Sciences Building

Abstract: Small random samples of rows and columns of any matrix are sufficient to compute an approximation to the whole matrix as well as solve several other Linear Algebra problems like low-rank approximation, provided, the sampling is done with probabilities proportional to squared lengths. Since the early theorems on length-squared sampling from the 90's, there has been a substantial body of work using sampling (random projections and probabilities based on leverage scores are two examples) to reduce matrix sizes for many computations. The talk will describe theorems, applications and challenges in the area.

Speaker:
Ravi Kannan
Principal Researcher at Microsoft Research India

The Fulkerson Prize in Discrete Mathematics (1991)
The Donald E. Knuth Prize(2011)
Fellow, Association for Computing Machinery (2017)