

Geometry Seminar
Tuesday, November 18, 2008
Room 613 WWH at 6:00 P.M.

An approximation algorithm for counting contingency tables

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I'll describe a randomized approximation algorithm to count contingency tables, that is, non-negative integer matrices with prescribed row and column sums. In many interesting cases, we are able to prove that the complexity of the algorithm is quasi-polynomial, that is $N^{\log N}$, where N is the total sum of the matrix entries. We suspect that in all cases the complexity is in fact polynomial, that is, $N^{O(1)}$. The algorithm builds on Monte Carlo integration and sampling from log-concave densities, the matrix scaling algorithm and the permanent approximation algorithm.

This is joint work with Z. Luria, A. Samorodnitsky, and A. Yong.

For more information, please visit the seminar homepage at:
http://www.math.nyu.edu/seminars/geometry_seminar.html.