Abstract: We study some problems relating to polynomials evaluated either at random Gaussian or random Bernoulli inputs. We present some new work on a structure theorem for degree-$d$ polynomials with Gaussian inputs. In particular, if $p$ is a given degree-$d$ polynomial, then $p$ can be written in terms of some bounded number of other polynomials $q_1,\ldots,q_m$ so that the joint probability density function of $q_1(G),\ldots,q_m(G)$ is close to being bounded. This says essentially that any abnormalities in the distribution of $p(G)$ can be explained by the way in which $p$ decomposes into the $q_i$. We then present some applications of this result.

Background: Students should have taken at least one course in probability and statistics.

About the speaker: Daniel Kane is a postdoc at Stanford University. His research interests are varied, but tend to focus on either number theory or theoretical computer science.

Snacks in MH331B at 2:30 PM
Talk starts at 3 PM

For more information, see our full schedule at:

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