Colloquium

University of Notre Dame
Department of Mathematics

Speaker: Oanh Nguyen

Princeton University

Will give a lecture entitled

Real roots of random functions

Date: Monday, January 20, 2020
Time: 4:00 PM
Location: 229 Hayes-Healy Hall
Departmental Tea: Tea in Room 257 (lounge in Hurley Hall) at 3:30 p.m.

Abstract:

Random functions are linear combinations of deterministic functions using independent random coefficients. These innocent-looking objects appear naturally in physics and approximation theory and remain mysterious despite decades of intensive research. We will discuss recent progress on the study of random functions and present our approach via the local universality method to study questions on the real roots. Among the applications, we derive a sharp bound on the mean number of real roots for the Kac polynomial which confirms a conjecture by Kac in 1943. We will also discuss the mean, variance, and the limiting distribution of the number of real roots for several classes of random functions.

Oanh Nguyen - Princeton University