



DEPARTMENT OF
MATHEMATICS
Illinois State University

Undergraduate Colloquium

Title: Kernel smoothing: A nonparametric approach in regression analysis

Speaker:

Professor Pei Geng
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Location: STV 121

Time: 3:00-4:00pm on Thursday (05/02/2019)

Abstract: Linear models are perhaps the most popular tool in data analysis. However, nonlinear patterns are often observed in real world. One robust nonparametric method to model nonlinear associations is the kernel smoothing method proposed by Nadaraya (1964) and Watson (1964). This talk will introduce the kernel smoothing method and its broad application in regression analysis as well as time series. Asymptotic properties and limitation of the kernel regression estimator will be also addressed. Moreover, a key factor in kernel smoothing is the bandwidth. Although the optimal bandwidth can be derived by minimizing the asymptotic mean square error, in practice, the cross-validation framework is more often used to select the optimal bandwidth value.

All are welcome!