

Title: Discrete Distributions for Smoothings

Abstract: Discrete kernel smoothing is now gaining importance in nonparametric statistics. The modern notion of a discrete associated kernel for smoothing or estimating discrete functions requires the development of new properties and construction methods. However, only a few count smoothers are available for the widespread use of discrete associated kernel estimators, and their constructions lack systematic approaches. So, which discrete distributions are needed for smoothing discrete functions? In this talk, I will first describe the main problems of discrete smoothing. I will then focus specifically on some particular and recent solutions of count distributions such COM-Poisson, gamma-count and double Poisson, for which they will be compared to the well-known binomial kernel. Finally, I will conclude by pointing out some further problems of interest.