## Statistical Machine Learning Seminar Hosted by Department of Mathematical Sciences

■ Date: Tuesday, April 12, 2016

Time: 12:00-1:00Room: WH-100E

Speaker: Ruiqi Liu (Mathematical Sciences)

■ Title: TBA

## Abstract

Consider that we are observing iid copies  $(X_i, Y_i)_{i=1}^n$  from random vector (X, Y). According to some historical information, the marginal distributions of X and Y are known, but the joint distribution is unclear. A problem of interest is to estimate  $\exp[h(X,Y)]$  for some measurable function h. This is of application value. For example, in insurance industry, some life insurance policies will cover both husband and wife . Let X, Y be the left life time of husband and wife after signing the policy and X, Y are usually dependent. The company is able to obtain the marginal distributions of X and Y from historical records. Often, the values of interest are  $\min(X, Y)$ ,  $\max(X, Y)$  or their distributions. This paper provides an empirical likelihood estimator to solve this problem. Some nice properties of our estimator are supported by theoretical analysis and simulation results.

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