

Statistical Machine Learning Seminar  
Hosted by Department of Mathematical Sciences

- Date: Tuesday, April 12, 2016
- Time: 12:00-1:00
- Room: 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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