



THE UNIVERSITY OF
CHICAGO

Department of Statistics

MASTER'S THESIS PRESENTATION

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**Sure Independence Screening Under Dependent
and/or Non-Gaussian Errors**

FRIDAY, May 10, 2013, at 9:00 AM

117 Eckhart Hall, 5734 S. University Avenue

ABSTRACT

Sure independence screening introduced by Fan and Lv (2008) is a method of reducing the predictor dimension (p) from high to a moderate scale that is less than the number of observations (n). This method has the property that all the important predictors are contained asymptotically in this reduced set of predictors, this was shown in the case where the error distribution was i.i.d Gaussian. This paper analyzes the properties of the sure independence screening under the setting of non-normal and/or dependent errors, and derive the necessary conditions under which the results of Fan and Lv (2008) hold. Dependence is quantified by a functional dependence measure, and the results rely on the use of Nagaev type inequalities.

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