

## Statistics and Data Science Seminar

### *Huber Regression and its Degrees of Freedom*

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**Abstract:** Huber regression utilizes the Huber loss instead of the common squared loss to achieve the robustness against outliers. It can be regarded as somewhere in the middle of least squares estimate and least absolute deviation. In this talk, we discuss a family of regularized Huber regression models for simultaneous model fitting and variable selection. The prior domain knowledge can be incorporated as linear constraints on parameters. The number of degrees of freedom is a measure of the effective number of parameters used to fit a regression model. It has been used in information criteria for model selection. We derive a formula for the number of degrees of freedom for regularized Huber regression with linear constraints. Simulation studies and real examples are used to demonstrate the application and performance of the proposed methods.

Wednesday, November 18 at 4:00 PM in Zoom