



THE UNIVERSITY OF  
CHICAGO

DEPARTMENT OF STATISTICS

## PhD Dissertation Presentation

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“On The Role Of Tail Behavior In Learning and Inference”

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### Abstract

Modern data analysis increasingly relies on both artificial intelligence and statistical tools. Distributions provide a concise and powerful language for describing the behavior of data and the methods applied to them. One particularly important aspect of a distribution is its tail behavior. In this talk, we will discuss tail behavior as a governing quantity in two settings: post-training for large language models and p-value aggregation in statistical inference. In both settings, we show that exploiting the tail properties of relevant distributions leads to sharper theoretical understanding and improved methodology.