# THE UNIVERSITY OF CHICAGO

## Department of Statistics

## MASTER'S THESIS PRESENTATION

### ERIC WEINE

Department of Statistics
The University of Chicago

## Efficient Calculation of Improved Simultaneous Testing Bands for QQplots

MONDAY, July 1, 2019, at 1:00 PM
Jones 304, 5747 S. Ellis Avenue

## ABSTRACT

Quantile-Quantile plots (QQplots) are often difficult to interpret because it is unclear how large the deviation from the theoretical distribution must be to indicate a lack of fit. Current packages and algorithms towards this end either do not ensure a robust Type I error rate, are too slow, or are under-powered to deviations in the tails of the distribution. In this paper, we present an efficient algorithm that computes simultaneous testing bands for QQplots. These bands have a variety of desirable properties, including being fast to compute and being sensitive in the tails of the null distribution.

---