Near-consistent robust estimations of moments for unimodal distributions

Tuban Lee

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Descriptive statistics for parametric models currently rely heavily on the accuracy of distributional assumptions. Here, leveraging the structures of parametric distributions and their central moment kernel distributions, a series of sophisticated yet efficient estimators, robust to both gross errors and departures from parametric assumptions, is proposed for estimating the mean and central moments of common unimodal distributions.

Theorem .1.

Proof. □