Department of Statistics

MASTER'S THESIS PRESENTATION

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Differentially Private Ranking Problem

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ABSTRACT

Differential Privacy is a very popular topic in computer science and statistics, which aims to implement various data analysis tasks while preserving information content. In this thesis, I rigorously introduce the fundamentals of differential privacy in different perspectives. The ranking problems, especially the top-k problem under privacy settings are emphasized with different solutions. A fast, low-distortion and oneshot differentially perivate primitive for top-k problem is introduced with rigorous proof. The applications of differentially private ranking problems use both k-peeling and oneshot mechanism, and experiments in both synthetic and real data examples are implemented with discussions.