



THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

PhD Student Seminar

Differential Private Low-rank Matrix Regression

By

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Abstract

Privacy guarantees of statistical methods are often achieved at the expense of accuracy. This talk investigates the trade-off between statistical accuracy and privacy in the low-rank matrix estimation which involves recovering an unknown low-rank matrix from partial or noisy observations. A primary focus is establishing minimax optimality for statistical estimation with the (ϵ, δ) -differential privacy constraint. We also design a differentially private algorithm that attain the minimax lower bounds up to logarithmic factors. The algorithm is based on Riemannian Optimization. We apply the algorithm to three examples: low-rank linear matrix regression, low-rank generalized matrix regression, and low-rank matrix completion.

Date : 24 April 2023 (Monday)

Time : 4:00pm

Venue: Room 5566 (near Lifts 27/28)

All are Welcome!