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THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON APPLIED MATHEMATICS

Sinkhorn-type algorithms for constrained optimal transport tasks

By

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Abstract

Optimal transport is a fundamental task in machine learning. In this talk, I introduce a Sinkhorn-type algorithm which approximately solves the optimal transport task under general constraints. Due to the fundamental theorem of linear programming, these models exhibit sparsity for the Hessian matrix in the dual formulation. To this end, we further augment the method by a later stage quasi-Newton method through Hessian sparsification. This method is faster than conventional primal-dual approaches by several orders of magnitude. I will walk through the procedure for general constrained optimal transport and partial optimal transport. I will also briefly cover our algorithm for martingale optimal transport.

Date : 14 October 2025 (Tuesday)
Time : 10:30a.m.-11:30a.m.
Venue : Room 1104 (Lift 19)

All are Welcome!