PHD DISSERTATION PROPOSAL PRESENTATION

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Infinite-dimensional inference and learning via optimal transport

WEDNESDAY, March 8, 2022, at 1:00 PM
Jones 111, 5747 S. Ellis Avenue

ABSTRACT

Optimal Transport (OT) studies how to transport one probability distribution to another with minimal cost. Rich and extensive theoretical results from OT have served as useful tools in several subfields of mathematics, which also found various applications in modern data science. In this talk, we discuss new ideas from OT and their applications to infinite-dimensional inference and learning problems. New approaches to three concrete problems will be presented: transform sampling, weak signal detection, and infinite-dimensional online learning. We focus on how these new ideas tackle important issues that are previously unexplored.