UNIVERSITY OF HOUSTON
DEPARTMENT OF MATHEMATICS

Analysis Seminar

Soledad Villar

University of Texas, Austin

Mathematical optimization for data analysis

3:00 pm in 646 PGH
December 5, 2016

Abstract

In this talk we explore optimization techniques for extracting information from data. In particular we focus in machine learning problems such us clustering and data cloud alignment. Both problems are intractable in the "worst case", but we show that convex relaxations can find the exact or almost exact solution for classes of "typical" instances. We discuss different roles that mathematical optimization techniques can play on understanding and processing data. These include efficient algorithms, a posteriori methods for quality evaluation of solutions, and algorithmic simplification of mathematical models.