DEPARTMENT OF MATHEMATICS
THE CHINESE UNIVERSITY OF HONG KONG

Center for Mathematical Artificial Intelligence
CMAI

MATH-IMS Joint Applied Mathematics Colloquium Series
The Chinese University of Hong Kong

This MATH-IMS Joint Colloquium Series is organized by Center for Mathematical Artificial Intelligence (CMAI), under Department of Mathematics and Institute of Mathematical Sciences (IMS) at The Chinese University of Hong Kong. The colloquium series focuses on mathematics and applications of artificial intelligence, big data and related topics.

Date: Oct 14, 2022 (Friday)
Time: 15:00-16:00 (Hong Kong Time)
Zoom Link: https://cuhk.zoom.us/j/92775210812

Large-Scale Convex and Non-convex Optimization in Data Science

Speaker: Professor Yinyu Ye
Stanford University

Abstract: In recent years, data science has attracted great attention from researchers and practitioners from both academia and industry. In this talk, we describe a few recent progresses on solving convex and nonconvex optimization problems in data science. They include an interior-point method based on ADMM for solving its subproblem; a homogeneous and dual-scaling algorithm for semidefinite programming, and a dimension-reduced trust-region method for nonconvex optimization. Theoretical analysis and various numerical results in data science show leading performance for our approaches.

Bio: Prof. Yinyu Ye is currently the K.T. Li Professor of Engineering at Department of Management Science and Engineering and Institute of Computational and Mathematical Engineering, Stanford University. He received his Ph.D. degrees in Engineering-Economic Systems and Operations Research from Stanford University. His current research interests include Continuous and Discrete Optimization, Data Science and Application, Algorithm Design and Analysis, Computational Game/Market Equilibrium, Metric Distance Geometry, Dynamic Resource Allocation, and Stochastic and Robust Decision Making. He is an INFORMS (The Institute for Operations Research and The Management Science) Fellow since 2012, and has received several prestigious academic awards including: the inaugural 2006 Farkas Prize on Optimization, the 2009 IBM Faculty Award, the 2009 John von Neumann Theory Prize for fundamental sustained contributions to theory in Operations Research and the Management Sciences, the inaugural 2012 ISMP Tseng Lectureship Prize for outstanding contribution to continuous optimization, the winner of the 2014 SIAM Optimization Prize awarded, the 2015 SPS Signal Processing Magazine Best Paper Award, etc. He has supervised numerous doctoral students at Stanford who received various prizes such as INFORMS Nicholson Prize, Student Paper Competition, the INFORMS Computing Society Prize, the INFORMS Optimization Prize for Young Researchers. According to Google Scholar, his publications have been cited 49000 times.