

**The Hong Kong Polytechnic University
Department of Applied Mathematics**

Colloquium Series on Young Scholars in Optimization and Data Science

Polynomial Optimization and Solving Low-Rank SDP

By

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Abstract

Polynomial optimization is an important class of non-convex optimization problems, which is closely related to measure theory, the theory of polynomial nonnegativity in mathematics, and also arises in diverse areas including power networks, computer vision, combination optimization, neural networks, quantum information. In this talk, we will introduce the popular tool for globally solving polynomial optimization -- the Moment-SOS hierarchy, and discuss how to reduce its complexity by exploiting structure. To efficiently solve large-scale low-rank SDPs arising from the Moment-SOS hierarchy, we propose an augmented Lagrange framework based on Riemann manifold optimization.



Date: 28 November 2022 (Monday)

Time: 10:00-11:00 (Hong Kong Standard Time GMT +8)

Venue: Online Talk via Zoom (Meeting ID: 939 6169 7800)

Speaker: Prof. Jie Wang, AMSS-CAS

Host: Dr. Xindong Tang, The Hong Kong Polytechnic University

Click to join:

<https://polyu.zoom.us/j/93961697800?pwd=ZSs4aFVPTnBOdXNnZDNKN3hWZ3hoZz09>

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