THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

SEMINAR ON APPLIED MATHEMATICS

Optimization on Manifolds via Graph Gaussian Processes

By

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Abstract

Optimization problems on smooth manifolds are ubiquitous in science and engineering. Oftentimes the manifolds are not known analytically and only available as an unstructured point cloud, so that gradient-based methods are not directly applicable. In this talk, we shall discuss a Bayesian optimization approach, which exploits a Gaussian process over the point cloud and an acquisition function to sequentially search for the global optimizer. Regret bounds are established and several numerical examples demonstrate the effectiveness of our method.

Biography
Dr.Yang is a Postdoctoral Research Associate at Princeton University. He obtained his Ph.D. in Computational and Applied Mathematics at the University of Chicago. His research interests lie broadly in the mathematical foundations of data science, including inverse problems, Gaussian process computation, and nonparametric statistics.

Date	**:**	**1 February 2024 (Thursday)**
Time	**:**	**10:30am - 11:30am**
Venue	**:**	**Room 4475 (Lifts 25/26)**

All are Welcome!