



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

Colloquium

PDE-based models in machine learning

By

**Professor Shi Zuoqiang
Tsinghua University**

Abstract

In this talk, I will present several PDE models and show their relations to machine learning and deep learning problem. In these PDE models, we use manifold to model the low dimensional structure hidden in high dimensional data and use PDEs to study the manifold. I will reveal the close connections between PDEs and deep neural networks. Theoretical analysis and numerical simulations show that PDEs provide us powerful tools to understand high dimensional data.

Biography:

Prof. Shi Zuoqiang got his Ph.D. in Applied Mathematics from Tsinghua University in 2008. He was a postdoctoral Scholar at California Institute of Technology in 2008 - 2011. Since 2011, he has been an Associate Professor at Yau Mathematical Sciences Center, Tsinghua University. Prof. Shi's research interests focus on nonlinear and non-stationary data analysis, singularity problems in fluid mechanics, numerical analysis and computation of immersed boundary method, nonlinear wave phenomena in periodic media, and so on. His publication appears in Applied and Computational Harmonic Analysis, Journal of Computational Physics, Advances in Mathematics, Physical Review A, Physical Review E, etc.

Date : 13 May, 2020 (Wednesday)

Time : 10:00-11:00

Venue: Online Talk via Zoom

*** The Talk will be given in English.**

***** ALL ARE WELCOME *****

For enrolment, please send your name and email (zoom's account) to chingching.lu@polyu.edu.hk on or before 12 May 2020, Tuesday.