

数学与系统科学研究院  
计算数学所网络学术报告

报告人: **Assitant Prof. LI Qianxiao**

( *National University of Singapore* )

报告题目:

**Machine Learning and Dynamical  
Systems**

邀请人: 于海军 副研究员

报告时间: **2020 年 10 月 22 日(周四)**

**下午 16:00-17:00**

报告工具: **腾讯会议 (ID: 226 808 398)**

**会议密码: 123456**

会议链接:

<https://meeting.tencent.com/s/uQLV4rJEcq4p>

## **Abstract:**

In this talk, we discuss some recent work on the connections between machine learning and dynamical systems. These come broadly in three categories, namely machine learning via, for and of dynamical systems, and here we will focus on the first two. In the direction of machine learning via dynamical systems, we introduce a dynamical approach to deep learning theory with particular emphasis on its connections with control theory. In the reverse direction of machine learning for dynamical systems, we discuss the approximation and optimization theory of learning input-output temporal relationships using recurrent neural networks, with the goal of highlighting key new phenomena that arise in learning in dynamic settings.

## **Bio:**

Qianxiao Li is an assistant professor in the Department of Mathematics, National University of Singapore and a research scientist in the Institute of High Performance Computing, A\*STAR. He graduated with a BA in mathematics from University of Cambridge in 2010, and a PhD in applied mathematics from Princeton University in 2016. His research interests include theoretical machine learning, numerical analysis, optimization and optimal control, and the application of data-driven methods to problems in the natural sciences.

**欢迎大家参加！**