



量子信息科技学术研讨会 (2018.9.17-21)

报告

量子神经网络综述

A survey of Quantum Neural Networks

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讲者介绍 Biography

English: Shengyu Zhang obtained his bachelor degree in mathematics, Fudan University in 1999, master in computer science, Tsinghua University in 2002, under the supervision of Mingsheng Ying, and Ph.D. in computer science, Princeton University in 2006, under the supervision of Prof. Andrew Yao. He then worked in NEC Laboratories America as a summer intern, and in California Institute of Technology for a two-year postdoc, hosted by Prof. John Preskill, Prof. Leonard Schulman and Prof. Alexei Kitaev. He joined The Chinese University of Hong Kong as an assistant professor in 2008, and became an associate professor in 2014.

Shengyu Zhang's research interest lies in quantum computing, algorithm designing, and foundation of artificial intelligence. He is an editor of Theoretical Computer Science, and of International Journal of Quantum Information. He published numerous papers in top conferences in theoretical computer science (STOC/FOCS/SODA/ICALP), quantum computing (QIP), and artificial intelligence (ICML/AAAI/IJCAI). Shengyu Zhang joined Tencent as a Distinguished Scientist in January 2018, taking charge of Tencent Quantum Lab.

中文：张胜誉本科毕业于复旦大学数学系；硕士毕业于清华大学计算机系，师从应明生教授；博士毕业于普林斯顿大学计算机系，师从姚期智教授。后在加州理工学院跟随 John Preskill、Alexei Kitaev 及 Leonard Schulman 教授做博士后研究。从 2008 年开始，张胜誉在香港中文大学计算机系任助理教授、副教授。张胜誉研究方向包括量子计算、算法设计和计算复杂性分析，以及人工智能基础；在理论计算机会议 STOC/FOCS/SODA/ICALP、量子信息处理会议 QIP、人工智能会议 ICML/AAAI/IJCAI 等上面均发表多篇文章；现担任 Theoretical Computer Science 及 International Journal of Quantum Information 杂志的编委。2018 年 1 月张胜誉作为腾讯杰出科学家身份加入腾讯，负责搭建量子实验室，致力于推动量子算法与软件的全面研究，和量子计算与人工智能结合的探索。

报告摘要 Abstract

English: Recent years witness a large number of studies on the interplay between quantum information processing and machine learning, especially deep learning. In particular, ideas, notions and tools from one field are borrowed to investigate the other. In this talk, we will give a survey of the field by illustrating a selection of recent results, and will call for more solid studies in this interesting and rapidly developing field.

中文：近年来出现了大量关于量子信息处理和机器学习（尤其是深度学习）的交叉研究。一些想法、观念和工具从一个领域被借用到另一个领域的探索。在这个讲座里，我们将选取这个领域一些最近的结果进行简介，同时呼吁大家在这个迅速发展的有趣领域进行更多的扎实研究。