

CSRC 2020 暑期班

机器学习和大数据在复杂性科学中的应用

北京计算科学研究中心
复杂系统研究部

组织者: 汤雷翰 (北京计算科学研究中心 CSRC)
周昌松 (香港浸会大学)
田亮 (香港浸会大学)
周海军 (中科院理论物理研究所)
吕琳媛 (电子科技大学)

线上转播: <https://live.bilibili.com/6782735>

课件: <http://www.csrc.ac.cn/en/event/schools/2020-06-04/56.html>

Monday, July 27, 2020

Venue	Tencent 同步播放: https://live.bilibili.com/6782735
9:00 - 9:10	Opening Ceremony Prof. Hai-Qing Lin and Prof. Lei-Han Tang (CSRC) Chairperson: Linyuan Lv (UESTC/CSRC)
Chairperson	Liang Tian (HKBU)
9:10 - 10:30	Introduction to Machine Learning 朱占星, 北京大学数学学院
10:30 - 10:40	Break
10:40 - 12:00	Optimal Transportation View of Generative Adversarial Networks 顾险峰, SUNY Stony Brook
12:00 - 14:00	Break
Chairperson	Liang Tian (HKBU)
14:00 - 15:20	机器学习编程介绍及实例演示I 邹文轩, 中山大学
15:20 - 15:40	Break
Chairperson	Lei-Han Tang (CSRC/HKBU)
15:40 - 17:30	Theory of Optimal Learning Machines Matteo Marsili, ICTP

Tuesday, July 28, 2020

Venue	Tencent 同步播放: https://live.bilibili.com/6782735
Chairperson	Changsong Zhou (HKBU/CSRC)
9:00 - 10:20	Introduction to Deep Learning 朱占星, 北京大学数学学院
10:20 - 10:40	Break
10:40 - 11:20	Compressed Sensing & Message Passing 孙怡帆, 中国人民大学
11:20 - 12:00	Inferring Differentiation Dynamics from Single-cell Sequencing and Clonal Data using Compressed Sensing 王寿文, 哈佛大学医学院
12:00 - 14:00	Break
Chairperson	Liang Tian (HKBU)
14:00 - 15:20	机器学习编程介绍及实例演示II 邹文轩, 中山大学
15:20 - 15:40	Break
Chairperson	Haijun Zhou (ITP/CAS) Pan Zhang (ITP/CAS)
15:40 - 17:30	Understanding Machine Learning with Statistical Physics (Video Recording) Lenka Zdeborova, CEA Saclay

Wednesday, July 29, 2020

Venue	Tencent 同步播放: https://live.bilibili.com/6782735
Chairperson	Changsong Zhou (HKBU/CSRC)
9:00 - 10:20	生物大脑对视觉相关信息的编码 张嘉漪, 复旦大学
10:20 - 10:40	Break
10:40 - 11:20	动态信息(运动预测、工作记忆等)的神经信息处理机制 弭元元, 重庆大学
11:20 - 12:00	人工智能和脑科学的比较与未来 毕则栋, 青岛大学

12:00 - 14:00	Break
Chairperson	Haijun Zhou (ITP/CAS)
14:00 - 15:20	Variational Mean-Field Theory for RBMs with Binary Synapses 黄海平, 中山大学
15:20 - 15:40	Break
15:40 - 17:30	Solving Statistical Mechanics: From Mean Field to Neural Networks then to Tensor Networks 张潘, 中科院理论物理研究所

Thursday, July 30, 2020, Morning

Venue	Tencent 同步播放: https://live.bilibili.com/6782735
Chairperson	Linyuan Lv (UESTC/CSRC)
9:00 - 10:20	复杂网络与社会计算科学 张子柯, 杭州师范大学
10:20 - 10:40	Break
10:40 - 11:20	揭示复杂网络的结构可预测性 胡延庆, 中山大学
11:20 - 12:00	Graph Neural Network and its Applications in Network Science 严钢, 同济大学

Thursday, July 30, 2020, Afternoon

CSRC-ICTP Joint Workshop

Venue	Zoom 同步播放: https://live.bilibili.com/6782735
Session 1	Spreading and Social Networks
Chairperson	Linyuan Lv (UESTC/CSRC) Matteo Marsili (QLS/ICTP)
14:30 - 14:35	Opening Remarks
14:35 - 15:05	Reconstruction of Transmission Pairs for COVID - 19 in Family Clusters by Crowdsourcing Data Xiao-Ke Xu, Dalian Minzu University

15:05 - 15:35	The Rise of Hate Speech in Online Social Media (Language) Animesh Mukherjee, IIT Kharagour
15:35 - 16:05	Echo Chambers on Social Media. A Data Driven Approach Walter Quattrociocchi, University of Venice
16:05 - 16:30	Break
Session 2	Theory of Machine Learning
Chairperson	Jean Barbier (QLS/ICTP) Haijun Zhou (ITP/CAS)
16:30 - 17:00	Dynamics of Generative Adversarial Networks in High Dimensional Limit Chuang Wang, Institute of Automation, CAS
17:00 - 17:30	Macro and Micro Perspective to Understand Deep Learning: Frequency Principle and Phase Diagram Zhiqin Xu, Shanghai Jiaotong University
17:30 - 18:00	The All-or-Nothing Phenomenon: a Peculiar Phase Transition in Sparse High-Dimensional Inference and Learning Jean Barbier, ICTP

Friday, July 31, 2020, Morning

Venue	Tencent 同步播放: https://live.bilibili.com/6782735
Chairperson	Liang Tian (HKBU)
9:00 - 10:20	生物网络数据分析及应用 刘闯, 杭州师范大学
10:20 - 10:40	Break
10:40 - 12:00	Time Series Analytics: Causality Detection and Dynamics Prediction 林伟, 复旦大学

Friday, July 31, 2020, Afternoon

CSRC-ICTP Joint Workshop

Venue	Zoom 同步播放: https://live.bilibili.com/6782735
Session 3	Microbiome and Community Ecology

Chairperson	Jacopo Grilli (QLS/ICTP) Liang Tian (HKBU)
14:30 - 15:15	Universal Dynamics in Microbial Ecosystems Amir Bashan, Bar-Ilan University
15:15 - 16:00	Fecal Microbiota Transplantation Affects Post-Antibiotics Microbiome Restoration and Intestinal Homeostasis in Aging Mice Lei Dai, SIAT/CAS
16:00 - 16:30	Break
Session 4	Neural Energy, Dynamics and Representation
Chairperson	Antonio Celani (QLS/ICTP) Changsong Zhou (HKBU/CSRC)
16:30 - 17:00	Human Brain Energetic Connectome based on Neuropil Distribution Yuguo Yu, Fudan University
17:00 - 17:30	From Sparse Irregular Spikes to Critical Avalanches: Cost-efficient Neural Dynamics Changsong Zhou, HKBU/CSRC
17:30 - 18:00	Creating a Live Crystal in the Lab Alessandro Treves, SISSA

转播二维码



课件二维码

