ML meets LFT July 24-26 2024, Swansea University: Programme – Vivian Tower 516

QCD (Wednesday am)

09:45-10:00	Gert Aarts	Opening
10:00-10:40	Lingxiao Wang	Learning hadron interactions from lattice QCD
10:50-11:30	Simran Singh	Testing machine learning against finite size scaling for the chiral phase transition
12:30	Lunch	

Flow I (Wednesday pm)

14:00-14:40	Elia Cellini	Stochastic normalizing flows for new theories and observables
14:50-15:30	Alessandro Nada	Sampling SU(3) pure gauge theory with out-of-equilibrium evolutions and stochastic normalizing flows
15:40-16:20	Ankur Singha	Multilevel sampling of lattice theories using RG-inspired autoregressive models

Sign problem, topology (Thursday am)

09:30-10:10	Tej Kanwar	Neural-network contour deformations for the signal-to-noise problem
10:20-11:00	Alexander Rothkopf	Learning optimal kernels for real-time complex Langevin
11:30-12:10	Biagio Lucini	Topological data analysis for lattice gauge theories
12:30	Lunch	

Flow II (Thursday pm)

14:00-14:40	Ryan Abbott	Progress in normalizing flows for 4d gauge theories
14:50-15:30	Fernando Romero Lopez	Applications of flow models to the generation of correlated lattice QCD ensembles
16:00-16:40	Mathis Gerdes	Exploring continuous normalizing flows for gauge theories

Gauge theories, spin glass (Friday am)

09:30-10:10	Akio Tomiya	MLPhys in Japan and developments of CASK: Gauge symmetric transformer
10:20-11:00	David Müller	Lattice simulations with machine-learned classically perfect fixed-point actions
11:30-12:10	Chanju Park	Empirical phase diagram of neural networks and spin glass theory
12:30	Lunch	

Generative networks, random matrix theory (Friday pm)

14:00-14:40	Tomasz Stebel	Entanglement entropy with generative neural networks
14:50-15:10	Shiyang Chen	Exploring generative networks for manifolds with non-trivial topology
15:40-16:20	Gert Aarts	Weight matrix dynamics and Dyson Brownian motion
16:30-16:50	Matteo Favoni	Towards the application of random matrix theory to neural networks