THEORY LECTURE: Machine Learning for Physics

FLORIAN MARQUARDT

April 06, 2022 to April 12, 2022
10:00 to 12:00
BLR (streaming) & Online (Zoom)

Abstract:
Machine learning techniques relying on deep neural networks are revolutionizing many areas of science and technology. In this brief lecture series, I will start with an introduction to the basics of neural networks and then discuss more advanced techniques like recurrent networks, reinforcement learning, neural differential equations, graph neural networks and transformers. I will finally give a survey of some applications to physics (especially quantum physics).

About the speaker

Biography

Florian Marquardt is a theoretical physicist whose current focus is on applying machine learning to scientific discovery and discovering physical systems that help for machine learning. He has a long-standing track record in areas bridging nanophysics and quantum optics, among them significant contributions to the theory of cavity optomechanics and the theory of superconducting circuit quantum electrodynamics. He is currently a scientific director at the Max Planck Institute for the Science of Light in Erlangen, Germany, as well as a professor at the local university. He studied at the university of Bayreuth, Germany, then did his PhD in Basel, Switzerland (finishing in 2002), afterwards went on to a postdoctoral stay at Yale university and a junior research group leader position at the university of Munich, before moving to Erlangen.

Theory Lectures: 6, 7, 11, 12 April 2022.

10h - 12h, Apr 6 at SMR and 7,11, 12 at BLR & Online (Zoom)

After registering, you will receive a confirmation email containing information about joining the online meeting.

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