

Revealing physical concepts learned by artificial neural networks

Thursday, 22 September 2022 09:45 (45 minutes)

Since many concepts in theoretical physics are well known to scientists in the form of equations, it is possible to identify such concepts in non-conventional applications of neural networks to physics. In this talk, we examine what is learned by artificial neural networks, especially siamese networks in various physical domains. These networks intrinsically learn physical concepts like energies, or symmetry invariants. The corresponding equations can be retrieved from the networks, opening up avenues to artificial scientific discovery.

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Session Classification: Understanding Machine Learning