

Interpreting artificial neural networks in the context of theoretical physics

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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 convolutional neural networks, autoencoders or siamese networks in various physical domains. We find that these networks intrinsically learn physical concepts like order parameters, energies, or other conserved quantities.

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