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## Detection of phase transition via convolutional neural networks

Friday 15 June 2018 10:30 (45 minutes)

A Convolutional Neural Network (CNN) is designed to study correlation between the temperature and the spin configuration of the 2 dimensional Ising model.

Our CNN is able to find the characteristic feature of the phase transition without prior knowledge. Also a novel order parameter on the basis of the CNN is introduced to identify the location of the critical temperature; the result is found to be consistent with the exact value. This talk is based on following paper, Journal of the Physical Society of Japan 86 (6), 063001 (arXiv:1609.09087).

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