Phase transitions in glassy systems via convolutional neural networks CHAO FANG, Texas AM Univ — Machine learning is a powerful approach commonplace in industry to tackle large data sets. Most recently, it has found its way into condensed matter physics, allowing for the first time the study of, e.g., topological phase transitions and strongly-correlated electron systems. The study of spin glasses is plagued by finite-size effects due to the long thermalization times needed. Here we use convolutional neural networks in an attempt to detect a phase transition in three-dimensional Ising spin glasses. Our results are compared to traditional approaches.

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