

Colloquium

The Architecture of Multilayer Neural Networks

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摘 要：

Allowing computers to model our world well enough to exhibit what we call intelligence has been the focus of more than half a century of research. To achieve this, it is clear that a large quantity of information about our world should somehow be stored, explicitly or implicitly, in the computer. Multilayer neural networks (MNNs) is introduced for the purpose of mimicking human brains and is widely studied in many aspects. Because it seems daunting to formalize manually all that information in a form that computers can use to answer questions and generalize to new contexts, many researchers have turned to learning algorithms to capture a large fraction of that information. Much progress has been made to understand and improve learning algorithms, but the challenge of artificial intelligence remains.

It is known that more layers of neural networks exhibits more complex behavior. However, more layers also means more computation time cost. This comes to the optimization problem of the architecture of MNNs. This talk aims to reveal an algorithm for determining whether two MNNs exhibit the same phenomenon. Meanwhile, a speculation in the learning of MNNs will be discussed.