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A 'Neural' Network that Learns to Play Backgammon

Authors:

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Abstract:

We describe a class of connectionist networks that have learned to play backgammon at an intermediate-to-advanced level. The networks were trained by a supervised learning procedure on a large set of sample positions evaluated by a human expert. In actual match play against humans and conventional computer programs, the networks demonstrate substantial ability to generalize on the basis of expert knowledge. Our study touches on some of the most important issues in network learning theory, including the development of efficient coding schemes and training procedures, scaling, generalization, the use of real-valued inputs and outputs, and techniques for escaping from local minima. Practical applications in games and other domains are also discussed.

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