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Starting from random play and given no domain knowledge except the game rules, the AlphaZero program taught itself to play chess, shogi, and Go, defeating a world champion program in each

game. Blue translucent pieces represent AlphaZero's possible moves; percentages indicate the predicted outcome. A single algorithm that can master several complex problems is an important step toward creating a general-purpose machine learning system to tackle real-world problems. See pages 1087, 1118, and 1140.

Image: DeepMind Technologies Limited

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