The main goal of the “Mastering the game of Go with deep neural networks and tree search” research paper is to beat a human at the game of Go using a computer. The computer would use an AI model created by various deep learning techniques to overall reduce the search space. The research paper also introduces a new approach that uses different networks, trained via supervised and unsupervised learning, for evaluating the board and selecting moves.

The computer Go player, AlpaGo, achieved a 99.8% winning rate against other computer Go agents, more than any other created before. AlphaGo won 5 games to 0 against the European Go champion, a first time. The neural network used to evaluate the board was trained using 19 x 19 board images of previous expert human moves to evaluate and reduce the search tree of the board effectively. A value network is then trained in order to predict the winner of the game played by the other networks. In order to achieve these results, the policy and value networks are combined with the Monte Carlo tree search.