Go is a two-player strategy game. It is a very complex game with more possibilities than visible atoms in the universe. This is one of the prime reason for the researchers to solve this problem by coming up with the solution in the a very different approach, unlike other games like chess.

If we try to solve GO with the same approach that we use for other games the state space would be around 250^{80}, which is practically impossible or rather an inefficient way to approach the problem. The papers goal was to address the problem.

The paper came up with an approach that uses two neural networks called policy network and value network which were used in Monte Carlo tree search problems. The policy network is for sampling the actions and value network is for evaluating positions.

As the policy network samples or predicts the next actions the branching factor will be greatly reduced. Supervised learning was used to achieve this, 30 million moves from the games played by humans were used training the policy neural network. It also uses reinforced learning by playing with itself many number of times. After that training the network when the network was tested with test data, it showed 57% accuracy.

The value network is the one used to predict the outcome without traversing till end of the tree, it uses a policy function which trains the network by reinforcement learning using self-play.

Finally, it uses the Monte Carlo algorithm to predict the best move. This fundamentally consists of four main steps –

- Selection – The Policy network takes a state and returns the action with highest chances of winning.
- Expansion – This will expand the tree with potential winning moves at various states.
- Simulation – This the value function is used to get potential outcome of each action which were found in the previous step and then the results are simulated to by taking actions based on selected policy.
- Back Propagation – In this the value are propagated up the root of the tree and the value of each node is updated.

Finally, I can conclude by saying that the paper has given proof of concept for an innovative technique of solving GO. More importantly it has tremendous impact on the field of AI, as the same technique can be applied for solving many real-life problems.