

Minimax approximation review

Details of Minimax Approximation:

1. As name says Minimax approximation is approximating by using generalized mean value for min and max values
2. This approximation gives tip to possible node to optimized path
3. Min and max values have continuous derivatives of all arguments
4. Min and Max values are computational intensive good alternatives to min and max operators
5. MM Approximation memorizes all it passes by assigning relationship to each to the other node

My Review:

As an idea it is very interesting that we are able to estimate the next possible node.

As approximation is computationally intensive I do not see it is becoming alternative to Alpha-Beta pruning with present format.

By saying that Approximation is definitely one of the alternatives for specific computationally non-sensitive big problem-solving cases.

As document rightfully says it is pretty new idea and definitely needs more research and application (like lookups for Min Max approximation values) to compete with AB pruning.

I believe AB Pruning can be improved with some of the ideas from Minimax approximation and of course I am saying this based on my limited exposure to AB pruning.

1. It would be much better if a node has more than just a value to it.
 - a. One of the example is having number of possible moves from that node. This will reduce the load and help getting better performance and accuracy of result.
2. Lookups can be used in heuristic functions if there is complex logic. Instead of executing the logic every time function called, all possible input values and result of the function with that input can be stored lookup tables or in memory once program started.
3. Even before reading this paper I strongly believe that remembering previous state will definitely improve AB instead of processing all possible nodes to give score. After reading this paper I think it would be much better if we can have another reference to each box and assigning number of possible moves should improve the performance the project just completed.

By saying all I was thinking about chessboard with only one pawn.

For example, in real game of chess each player has 6 unique pawns, remembering all pawns possible moves both sides could impact the performance by consuming most of the memory on performing system.