Deep Blue by IBM Watson Summary

Goals

To defeat human chess champion, specifically world champion Gary Kasparov

Tools and Techniques

Deep Blue II computer is developed by IBM Watson team to defeat the human chess player for the first time and this was the major advancement in AI research. Some of the challenges in chess is enormous search space hence not feasible to search till end game and branching factor. IBM developed novel chips in AI space and newer search strategies to defeat human player. The chip had 30 nodes where initial search is done by one master node and deeper level searching by rest of the nodes. Deep Blue mentions some of the techniques such as iterative Deeping (ID), Quiescence search (QS) and few others. ID helps to search the tree gradually and keep results at every level and QS helps to cut down the number of iterations and number of results will stabilize at certain level of the tree and hence search terminates. Further IBM used hardware based evaluation technique to further improve the speed of search. Search is implemented in a combination of hardware and software.

Results

IBM used several search strategies and right use of hardware and software combination to acheieve this goal. Hence IBM Watson team developed Deep blue computer to beat human player for the first time in chess.