The paper on Deep Blue described the specification and the technique used in the machine that defeated then-reigning World Chess Champion Garry Kasparov in a six-game match in 1997.

The system is of the scale of the supercomputer with 30 processor, and 480 single-chip chess search engines ran on AIX OS. Each of the chess chip could recognise roughly 8000 different patterns and capable of searching 2-2.5 million positions per second. During the match with Garry Kasparov, the system on average evaluating 125 million positions per second.

To beat the champion, strategies such as quiescence search, iterative deepening, transposition tables, and NegaScout. Here highlight some key points

The search was highly non-uniform and provide “insurance” 2 against simple errors with massively parallel search and over 500 processors available to participate in the game tree search at the same time.

The Move generation predicted attacking moves which improved quiescence searching Evaluation function.

The pruning mechanism called “no progress”. By detecting if the current position could have been reached by playing an alternate move at some earlier position on the search path. If so, the search is terminated with a fail low.

Apart from manual evaluation function, automated evaluation function analysis was implemented using hill climbing approach and comparison training to tune the weight of evaluation function.

The database of system contained an opening book with consisted of about 4000 positions and an extended book which summarise the summarise the information available at each location of a 700,000 game database, and endgame databases which contained many six piece endgames and five or fewer piece position

The success of Deep Blue in the 1997 match was not the result of any one factor. The large searching capability, non-uniform search, and complex evaluation function were all critical.