By way of contrast, read John Nunn's contribution on extracting knowledge from endgame databases. No hiding behind elaborately developed theories and models, but a straightforward explanation in common language by one of the world's strongest chess-players and an expert in the field of endgame theory. Nunn uses the omniscient endgame CD-ROMs of Ken Thompson to improve his own knowledge of hideously complicated endgames. To report his findings, he uses the very same tools that have been used by chess experts for centuries: chess diagrams, chess moves, and common language.

The book contains 17 papers, most of which are well worth reading. Surprisingly maybe, my favourite article is the only one that does not directly concern computer chess. It is by Lake, Schaeffer and Lu, and describes the utilization of endgame databases in real time. At present, this is relevant only for games such as checkers and simpler games such as awari. In these domains deep searches from a root position in the early stages of the game already reach into the realm of endgames for which databases have been created. The paper deals with the practical problems which must be overcome in order to make these databases accessible from the (regular) game tree.

Additionally, I particularly liked the papers by Gobet and Jansen, and the one by Uiterwijk and Van den Herik, both discussed above, as well as contributions by Breuker, Allis, and Van den Herik, on proof-number search; by Reinefeld, describing a minimax algorithm which is faster than alpha-beta; by Feldmann, Mysliwietz, and Monien, on game-tree searching on massively parallel systems; and by Beal and Smith, discussing random evaluations in chess.

I greatly enjoyed these proceedings of the 7th Advances in Computer Chess, the actual conference of which I was unable to attend. The book is highly recommended, and I sincerely hope that the future will maintain the editorial and typographical standards that it has (re)set.

References

Berliner, H. (1993). Playing Computer Chess in the Human Style. *ICCA Journal*, Vol. 16, No. 3, pp. 176-182.

Botvinnik, M.M. (1993). Three positions. *ICCA Journal*, Vol. 16, No. 2, pp. 71-75.

Jansen, P.J. (1990). Problematic Positions and Speculative Play. *Computers, Chess, and Cognition* (eds. T.A. Marsland and J. Schaeffer), pp. 169-181. Springer-Verlag, New York, Berlin, Heidelberg. ISBN 0-387-97415-6.

LITERATURE RECEIVED

ARTICLES PUBLISHED ELSEWHERE

ENHANCED ITERATIVE-DEEPENING SEARCH

A. Reinefeld and T.A. Marsland (1994). Enhanced Iterative-Deepening Search. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Vol 16, No. 7, pp. 701-710.

We reproduce the abstract:
"Iterative-deepening searches mimic a breadth-first node expansion with a series of depth-first searches that operate with successively extended search horizons. They have been proposed as a simple way to reduce the space complexity of best-first search like A* from exponential to linear in the search depth.
But there is more to iterative deepening than just a reduction of storage space. As we show, the search efficiency can be greatly improved by exploiting previously-gained node information. The information-management techniques considered here owe much to their counterparts from the domain of two-player games, namely the use of fast-execution memory functions to guide the search. Our methods not only save node expansions, but are also faster and easier to implement than previous proposals.