

sci.math: Re: How long would it take a computer to completely "solve" chess?

## Re: How long would it take a computer to completely "solve" chess?

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From: Sean O'Leathlobhair (jwlawler\_at\_yahoo.com)

Date: 09/15/04

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Guy Macon <<http://www.guymacon.com>> wrote in message news:>...

> (I will be starting a hot project later this week and will be limiting  
> my newsgroup usage to reading selected posts and an occasional reply.)

>

> Sean O'Leathlobhair <jwlawler@yahoo.com> says...

>

> >But if we do any pruning, can we be sure that we have not missed some

> >very obscure trick? We may have solved the game for all practical

> >purposes but if we have pruned anything, could we really say that we

> >have theoretically solved chess?

>

> Yes. Your objection is valid for the normal runing that chess

> programs do, but there are other ways to prune which have zero

> chance of missing something subtle like throwing away two rooks

> and a queen in order to set up a forced mate in 49. Here is how:

>

> Imagine that you are a program searching the entire move tree,

> looking to find wins, losses and draws.

>

> Now add a modification: if you see a position that has a king and

> a rook against a king, search one ply farther to rule out stalemate

> or losing the rook, mark it as a win for the side with the rook,

> and stop searching that branch. Why? because there exists an

> algorithm that wins every time from that position. You just pruned

> without any chance of missing something subtle.

>

> Now imagine a thousand years of humans and computers searching

> for more algorithms that will reduce the size of the search...

>

> It's not just that RK vs K position that you can prune at either:

> you can prune at any position that has 6 men on the board (soon it

> will be 8); we know the result from every such position already.

Thanks.

I can see that this sort of pruning is safe. I did not intend to

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question all sorts of pruning, just alpha-beta-pruning (I should have been clearer).

Others have responded to my question on whether specifically alpha beta pruning is safe. I am still digesting their comments.

Seán O'Leathlóbhair