

The making of a gotchi, a simple way to find extreme sudokus

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Re: The making of a gotchi, a simple way to find extreme sud

by eleven

» 19 Jan 2011, 16:39

Hi dukuso,

“ dukuso wrote:

These results are unexpected to me ... did eleven expect it when he/she started ?

After my results in the high clue search i was optimistic. But i did not expect to find so much.

“

Is the same method maybe useful to find hard exact-cover problems or hard SAT-problems in general ?

A google search showed, that the genetic algorithm heuristic has been used several times to solve exact cover problems and other SAT problems like TSP.  
E.g. i had a look at the sketchy article A New Genetic Algorithm for Set Covering Problems, which shows some similarities to what i have done.  
  
Not being an expert, i dont know, how they perform compared to other methods, but i guess that there is a niche of special problems, where they give competitive results.  
Of course all depends on one's choices, how the selection (fitness/filter) and mutation/crossover (expand) is defined.

! /

QUOTE

eleven

Posts: 3022

Joined: 10 February 2008

8 PM

Re: The making of a gotchi, a simple way to find extreme sud

by dukuso

» 20 Jan 2011, 12:22

this paper is for solving set cover problems not for creating hard instances, as I understand ?  
  
I forgot to mention QWH-problems , "quasigroup with hole" , which is almost sudoku and where your methods should also be useful and which are of some mathematical, theoretical interest with lots of papers.  
  
Maybe there is already a "movement" to create hard QWHs of given size !?

! /

QUOTE

dukuso

Posts: 479

Joined: 25 June 2005

8 PM

Re: The making of a gotchi, a simple way to find extreme sud

by dukuso

» 20 Jan 2011, 12:25

no google hits for "creating qwh" or "creating hard qwh" , 2 results for "creating hard sat" :  
  
[http://www.google.com/search?hl=en&q=%22 ... =&aql=&oq=](http://www.google.com/search?hl=en&q=%22...=&aql=&oq=)

! /

QUOTE

dukuso

Posts: 479

Joined: 25 June 2005

8 PM

Re: The making of a gotchi, a simple way to find extreme sud

by eleven

» 20 Jan 2011, 21:47

Thanks for the link, dukuso.  
  
I had no time to look closer yet, but i like the 3SAT problem, because its the most basic and concetrated NP complete one. So it might be interesting for me to try to create "hard" examples.

! /

QUOTE

eleven

Posts: 3022

Joined: 10 February 2008

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