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Oct-8-10



Q: Can a
machine think?

**A1: no, they
only think
they can**

A machine can never...

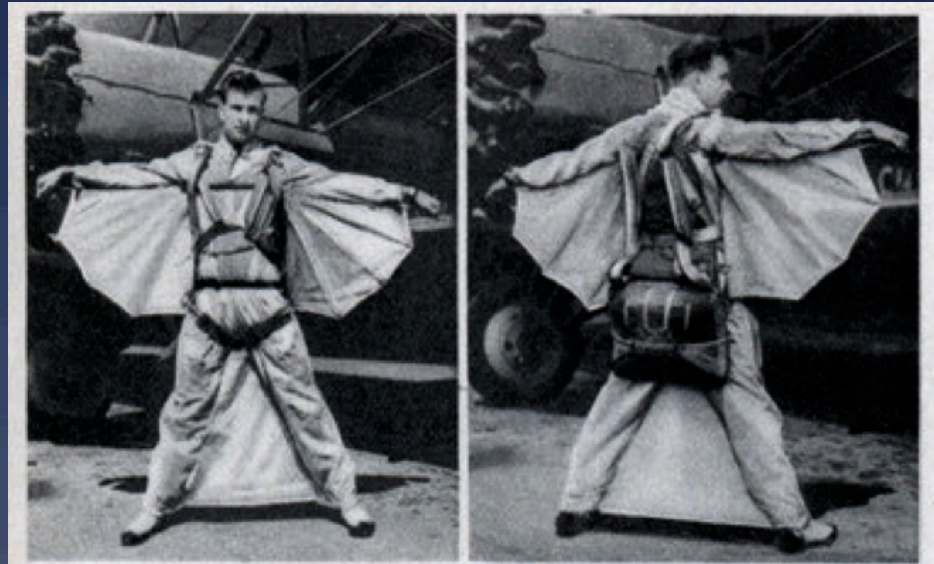
- * Do “X” like a human can
 - * Cause I am human
 - * Cause only humans can do “X” like me

- * Look at the person next too you
 - * Are you sure that they are thinking “just like you”?
 - * And if they were: what a dull world it would be

A2: depends
what you think
“thinking”
means

Aeroplanes can't fly

- * Cause birds fly
- * And birds flap their wings
- * And aeroplanes don't flap their wings
- * So they don't fly



Abstract ideas, implementation independent

- * Every computer scientist knows this to be true:
 - * There are computational properties, independent of processor the algorithm runs on, or the implementation language.
 - * The idea is different to the substrate
 - * “computer science is no more about computers than astronomy is about telescopes”
 - * Dijkstra (and he could have been talking about AI)

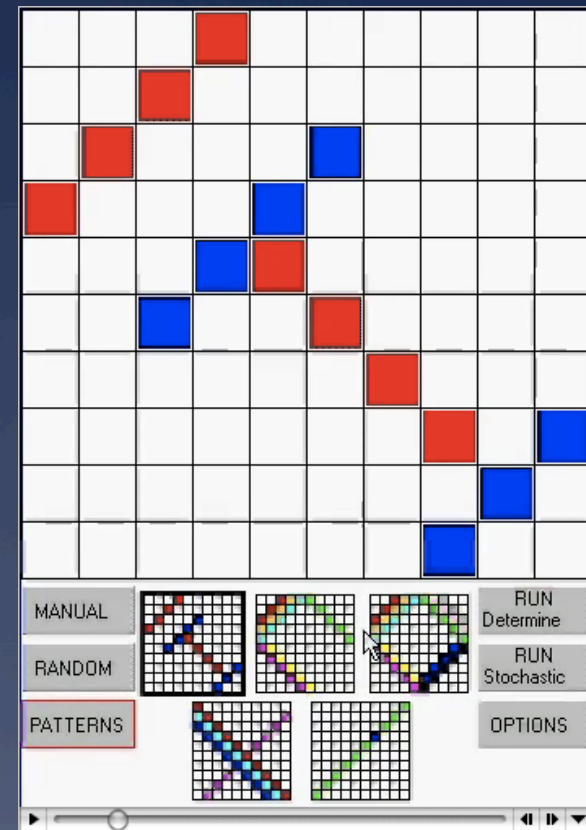
The Platonic Beast

- * Thinking about thinking is hard
- * Lets do something simpler- like walking
- * Should a robot could/should walk like us?
(see <http://people.cs.ubc.ca/~pai/movies/beast.mpg>)
 - walks by throwing a spare limb over its head
 - Such a move would tear us apart
 - but it's natural for that kind of walking thing.



Stochastic search

- * “Latin's square”: no 2 same colors on the same row or column
 - Method 1: deterministic exhaustive theorem proving
 - Method 2: stochastic: makes an initial guess, then refines that guess based on local feedback.
 - <http://menzies.us/csx72/img/latin.mov>
 - Stochastic kills deterministic
- * You would not expect a human to think using stochastic search (too much CPU twiddling).
 - But for a computer, stochastics are useful since each local twiddle can be done very quickly
 - An AI may think wildly different to a human



Prediction

- * The more we turn to computers,
 - * The more we'll get answers which
 - * Work
 - * But which we don't understand
- * Welcome to the 21st century



Questions?
Comments?