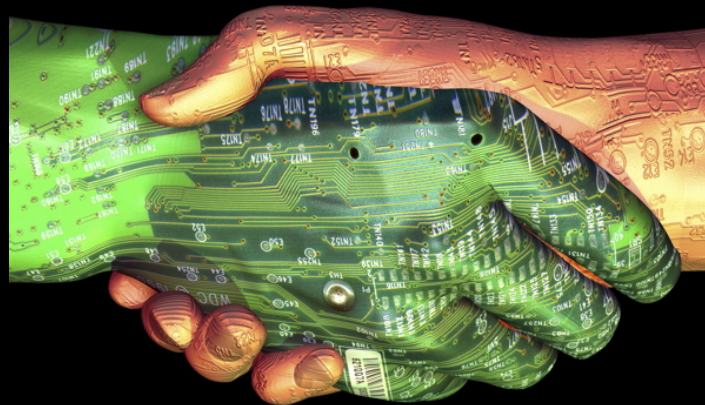


The Mind of the Machine: Artificial Intelligence?

Paul Curzon

Queen Mary, University of London



Created by Peter McOwan and Paul Curzon
of Queen Mary, University of London
as part of the cs4fn project
with support from EPSRC and Google

Talk Outline

- How would you know if you met an intelligent computer?
- How do you build one?
- Some games and experiments
- The future...



Artificial Intelligence in Movies



Intelligence in Computer Games



What do we mean by Artificial Intelligence?

- What do we mean by human 'intelligence'?
- If we identify abilities in others as intelligent, can we then build machines to also have these abilities?

I have a piece of paper that is
more intelligent than anyone
in this room!

Als beat humans at their own game

1997, IBM's **Deep Blue**
Supercomputer beat
reigning World Chess
Champion, Garry
Kasparov

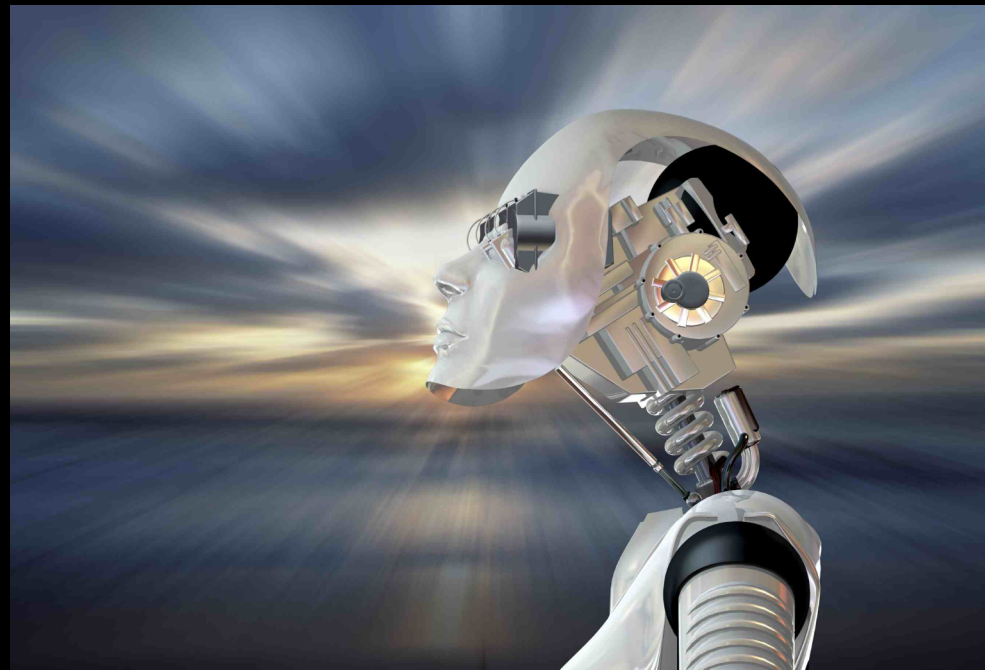


...Following rules,
...brute force searching

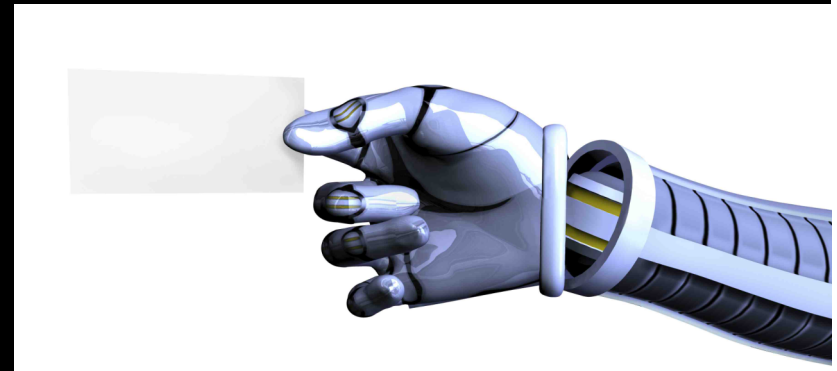
**"I'm not afraid to admit
that I'm afraid,"**
- Kasparov

A Victorian Parlour Game

How did a Victorian party game
launch the subject of Artificial Intelligence?



The Turing test: a test of intelligence?



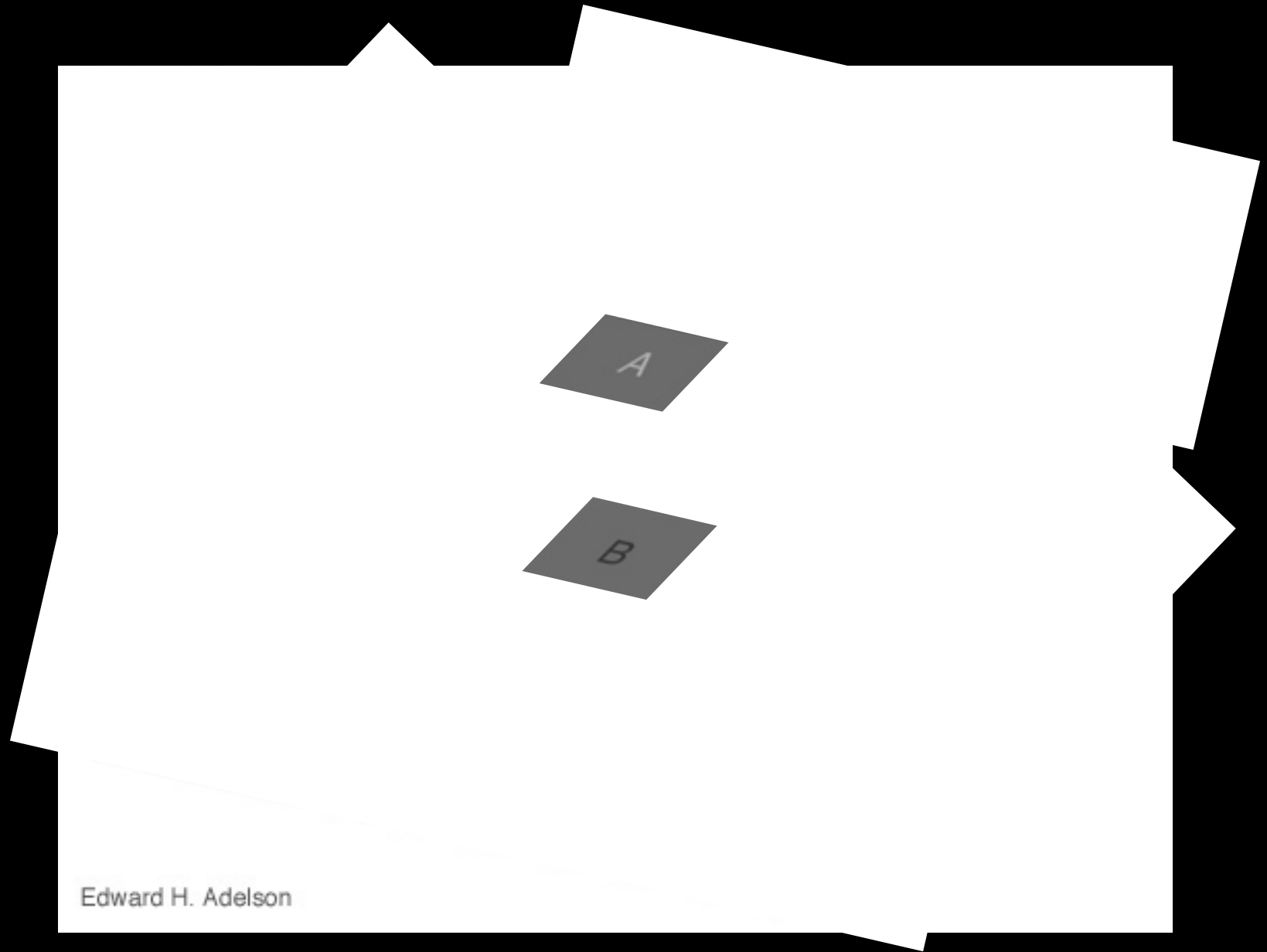
Lets play....
Who's the AI?

Volunteers please!
Acting ability needed

So what about our Brain

- Obviously Intelligent!
- Its 'smart' so
 - Don't just try and do what it does
 - copy the machinery!
- What have our brains evolved that makes us smart?
- First a brain test ...



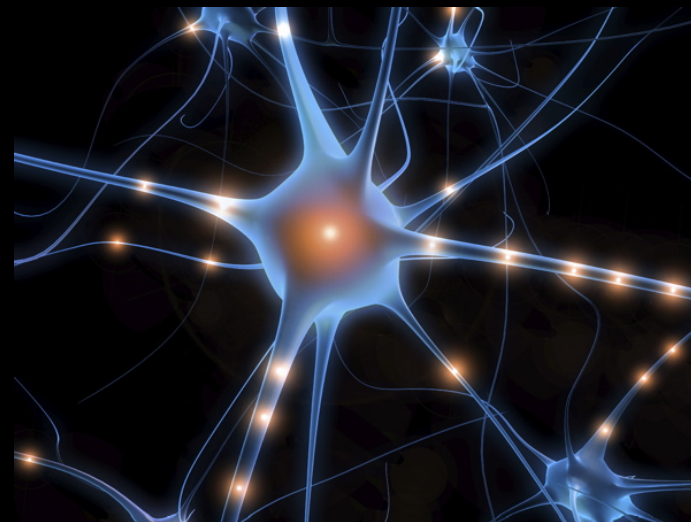


Edward H. Adelson

An illusion by Edward H Adelson

So what's in our head?

- Rules being followed...how?
- Billions of interconnected nerve cells called neurons
- Very simple computing units, working together

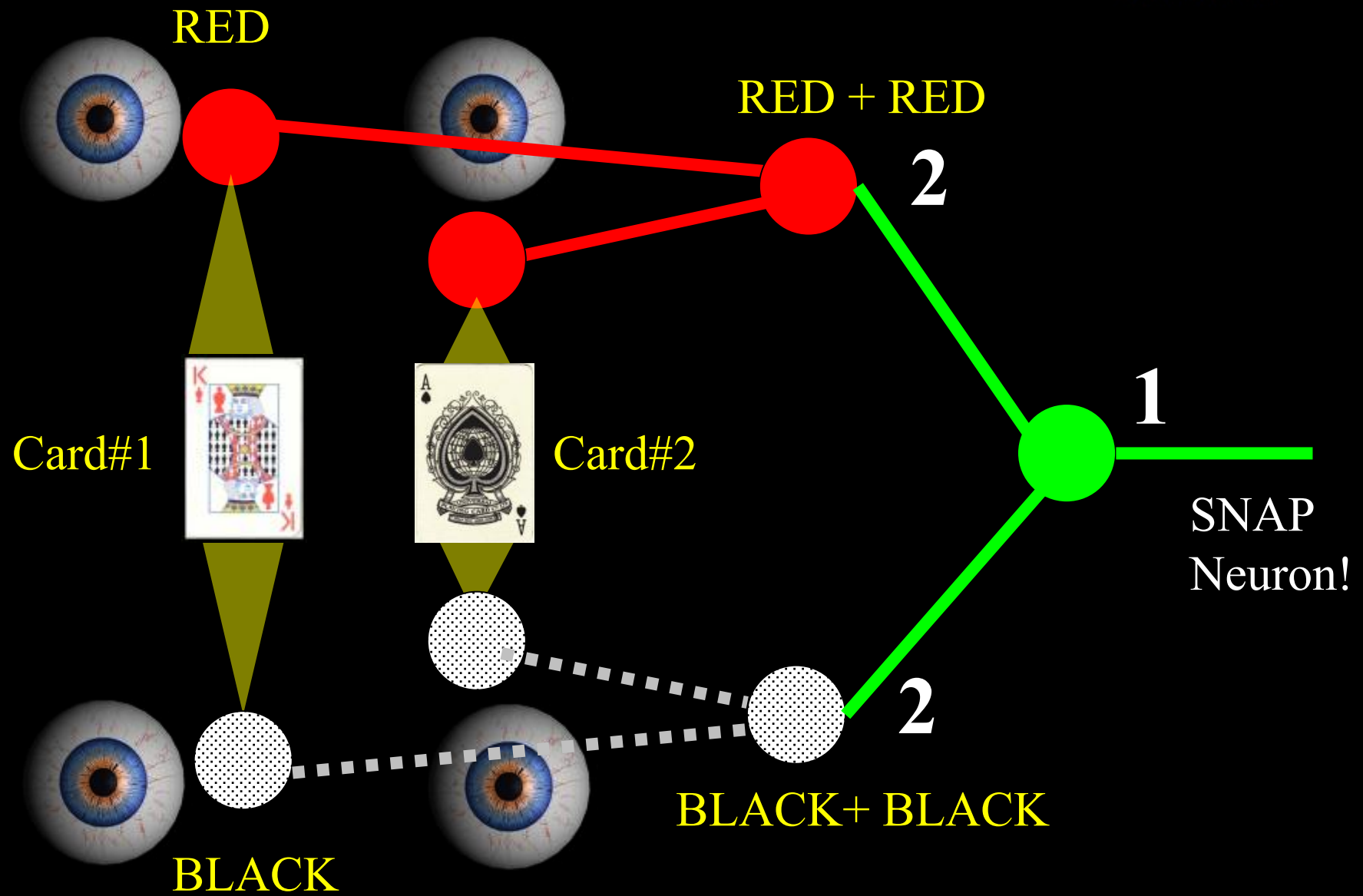


A simple model of a neuron

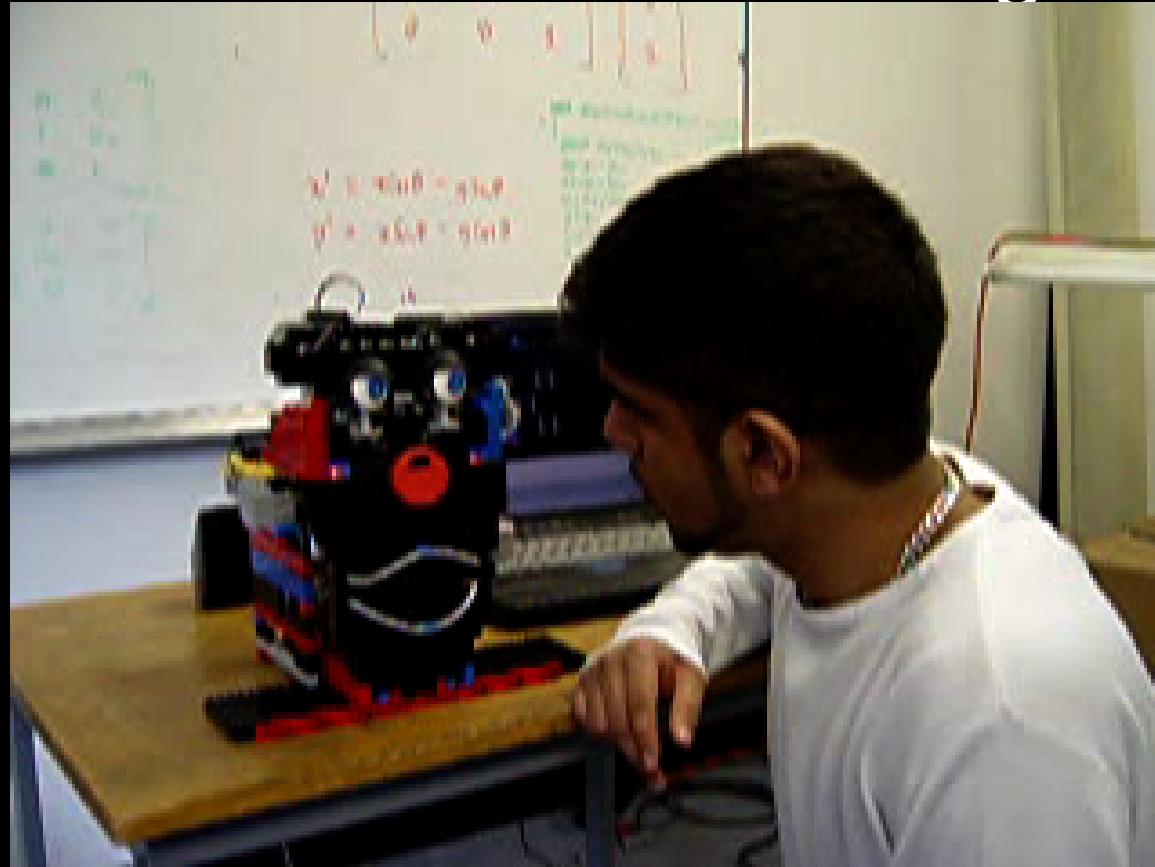


- But what does a neuron 'understand'?

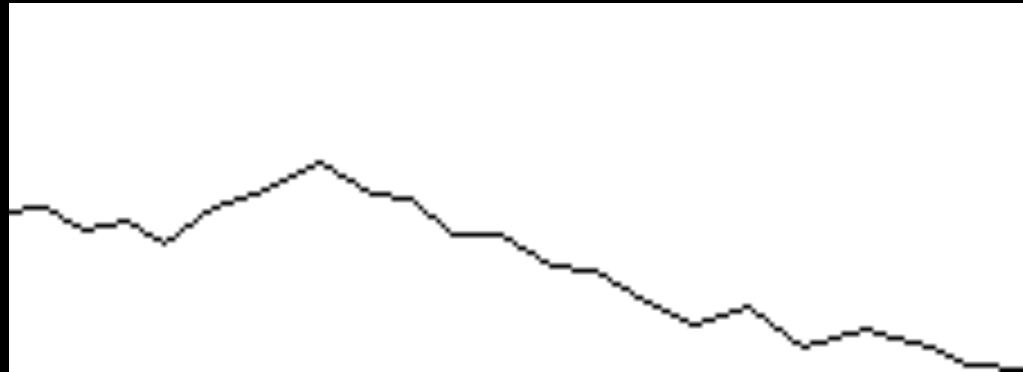
Let's build a bit of a brain
to play snap!



Put lots of artificial neurons
together...Emotional Intelligence?



Other ways to become intelligent?



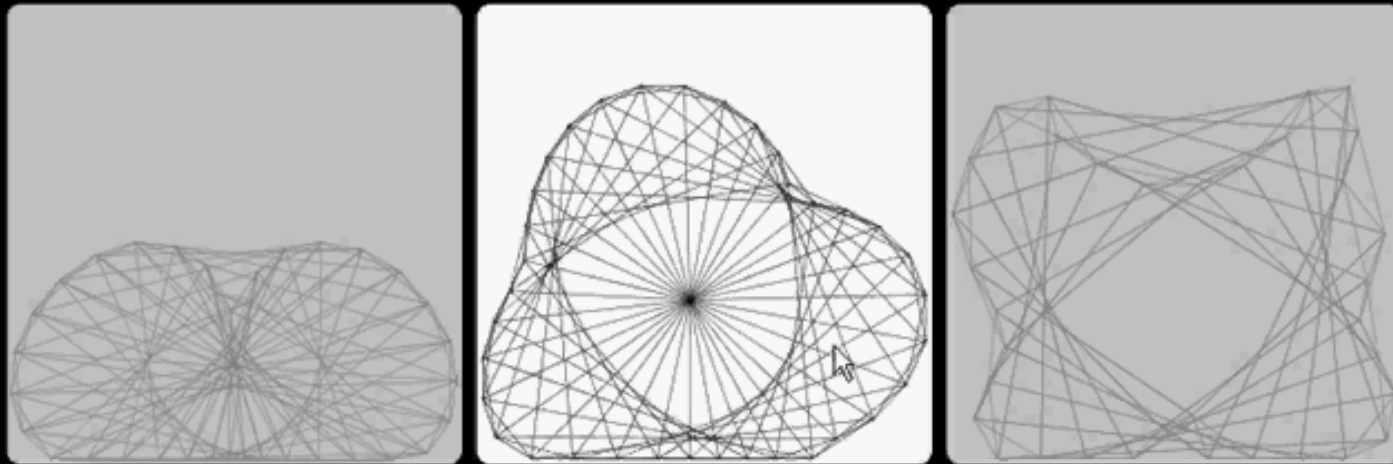
Survival of the fittest

www.sodarace.net

Breeding Solutions

sodarace

Set up your own race now



First choose your racer

AI can already...

- Win at games
- Have (limited) conversations
- Diagnose medical problems
- Show creativity
 - Humour, Painting, Music, Poetry
- Show emotions
- Reproduce

The Future

- We will all soon be living with robots.
 - You could be one of the people making it happen
- Human intelligence is still a mystery that we are exploring through biology, psychology and computer science
- You will be a part of that future

