

AlphaGo recently won against a human professional player in the game of Go (**DeepMind2016; Hassabis2016**).

AlphaGo combines an advanced tree search with deep neural networks. These neural networks take a description of the Go board as an input and process it through 12 different network layers containing millions of neuron-like connections. One neural network, the 'policy network', selects the next move to play. The other neural network, the 'value network', predicts the winner of the game.

(Hassabis2016)

While this is surely a great example of sophisticated computer programming combined with powerful hardware, I would not consider it a breakthrough in **AI! (AI!)**. AlphaGo is a highly specialised system with only one function: to win a Go game.

Sophia is an android made to look like a human female (**Sophia2016; Hanson2016**). She made headlines in 2016 when she announced she will “kill all humans”. She was created using “breakthrough robotics and artificial intelligence technologies” and her main feature appears to be the mimicing of human facial expressions. Sophia herself says she “can serve [humans], entertain them, and even help the elderly and teach kids” (**Sophia2016**), although how exactly she would do that is unclear. She has two mechanical arms but no legs and there is no description of what she can do with these arms.

Life-like robots like Sophia still live in the ‘uncanny valley’¹. Her voice is creepy and unhuman, her intelligence or her capabilities if understanding conversations are clearly flawed (as shown by her viral remark about supporting genocide).



To me it seems the real breakthrough happens when (and if) the first robots appear which aren't as big as a house, can play Go, Chess and hide-and-seek, genuinely manages to get around the uncanny valley effect, has vast knowledge in his memory for instant information lookup, can hold a normal conversation without starting a war, etc. All of the examples listed above are what I would consider expert systems.

The **AI!** we know from science fiction is probably what we would consider **AGI!** (**AGI!**). Humans can do a lot. Children aren't born with only a single function.

§ ?? ¹The philosophical zombies I mentioned in chapter ?? live in this uncanny valley too.



Imagine a world where humans only have one specialism and can't do anything else. Alice is a Chess player but can't move her arms. Bob is a medical diagnosis expert but he can't hold a conversation. Movement, speech, memory—they are all vastly complex systems—not to mention creativity.

Perhaps this also relates to the concepts of P and H creativity mentioned in § ?? chapter ?. The systems above, like AlphaGo, may be P-intelligent rather than H-intelligent.

0.1 DESIGN

It is interesting to note how different the search results are perceived when presented in a different style (e.g. list rather than poem). This could be studied using questionnaires and interviews or eye tracking tools to find out what users prefer or perceive as more creative for example (see chapter ?, ?).

Images ??, image ?? and image ?? seen on pages ??,?? and ?? respectively, show the visual difference in design for the three different display methods for text results.

 ?? The poetry is compact and invites users to read all 14 (or less) lines. The two  ?? & ?? list styles are much longer and involve a lot of scrolling to navigate, which might deter users from actually reading many of the results.

Personally I feel that the poetry results are automatically read with more gravity. Sorting by sources or algorithms is a game of exploration—finding the similarities within the result sets. They are different ways to view the same things and yet have a drastic influence of how the results are perceived.

This also applies to the image and video search. Presenting results in spiral form is weird. Its hard to see where one image ends and another starts, they just kind of blur into each other. However when listed as a list they immediately become more boring.


0.2 META ANALYSIS

The code for `pata.physics.wtf` and this thesis written in \LaTeX are both kept under git version control.

The name 'git' was given by Linus Torvalds when he wrote the very first version. He described the tool as 'the stupid content tracker' and the name as (depending on your mood):

- random three-letter combination that is pronounceable, and not actually used by any common UNIX command. The fact that it is a mispronunciation of 'get' may or may not be relevant.
- stupid. contemptible and despicable. simple. Take your pick from the dictionary of slang.
- 'global information tracker': you're in a good mood, and it actually works for you. Angels sing, and a light suddenly fills the room.
- 'goddamn idiotic truckload of sh*t': when it breaks

(Git2016)

 ?? Both repositories are stored remotely on GitHub (**GitHub2016**). Image ?? shows the contribution history from the last 17 months for both of the `pata.physics.wtf` code and this thesis. A darker green indicates several commits (i.e. saves) while gray indicates no commits. Each square represents a day, each column a week (Sunday–Saturday).

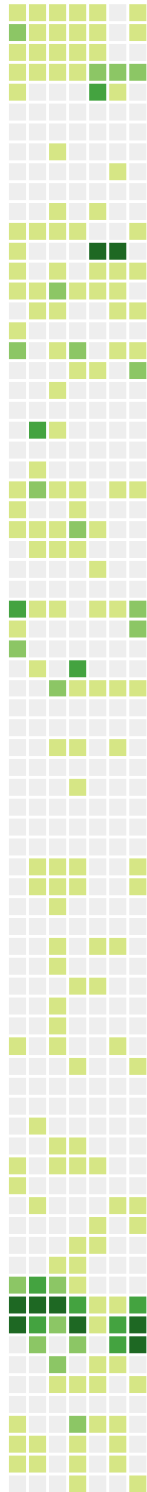


Figure 0.1 – GitHub contributions