Y790-32707 - HW #3: Controversy in Computer Science

Caner Derici

1 intro

From popular culture to the top tier science labs around the world, one controvercy in computer science was always getting a huge attention everywhere, namely Artificial Intelligence (AI). Rooted at the very birth of modern computers, and attracted attention from the very pioneers of computer science, AI kept its piquancy over the decades among not only the scientists but also all kinds of imaginative people around the globe.

Artificial intelligence (AI) is a subfield of computer science, that basically tries to mimic the human intelligence on a computer. In other words, it tries to make the computers think, reason and create new information using the information at hand. The field began its journey in the early 50s as a philosophical debate. However, the proliferation of modern computer technologies in the 70s made it possible to realize most of the controversies into the actual implementations for researchers to experiment upon.

While the idea of machines being intelligent means for example a computer is going to be able to play chess (i.e. devise a strategy in a game), it also means that a computer may as well make a crucial decision on its own, which can be both magnificent and terrifying at the same time. And judging by the role of computers in both past decades' and today's societies, it's easy that the idea of thinking computers provokes all kinds of controversies, such as computers taking over the world, making decisions that effect the lives of billions, or simply acting as a real person on the social media.

the controversy

. Philosophy of mind. Consciousness.

what is AI?

2 can machines think?

Alan TUring, brief history of AI

Edsger Dijkstra summarized this latter view brilliantly: ... Alan M. Turing thought about criteria to settle the question of whether Machines Can Think, a question of which we now know that it is about as relevant as the question of whether Submarines Can Swim.

3 can a computer be conscious?

What if computers became so intelligent that they are able to exhibit emotions and feelings

4 can/will computers take over the world?

devastation unmanned aerial vehicles can bring but what if instead of a person "behind the wheel" of a drone, it was strictly a computer making these decisions?

5 conclusion

- right now, no, but the human brain is a deterministic machine, so eventually the mechanisms of how we actually think will be discovered and simulating that behavior with a machine will be possible.

- consciousness is not a well defined concept, so we're not even sure what the question means, let alone answer it.

- computers themselves won't do that, but the people who program their egos into those machines could. But maybe the machines will take over some of the jobs of humans (such as marketing specialist economists trying to predict the market behavior).

Artificial Intelligence (AI) is not posing too much of a problem right now, but it definitely concerns scientists with its potential. After all, we are trying to get computers to become intelligent, near thinking entities. – would we no longer be able to justify their constant servitude to the human race? But even that is getting way ahead of problems that we are going to face much sooner. We have all heard about the Oh, and of course, we need to keep their egos in check lest they decide to take over the world.

A big one comes from philosophy of mind: can a computer be conscious? Views are split: some people heavily believe they can, some people believe they can't and some (probably on the CS rather than philosophy side of things) believe the question isn't even meaningful. The inimitable

AI is still a popularly fascinating topic that captures the imagination and, of course, popular controversy. Aside from philosophical considerations, some people (including AI luminaries like Stuart Russell) view the possibility of general artificial intelligence as incredibly dangerous for the human race. And even existing systems, far from "general" intelligence, have controversies of their own—what do we do, for example, with an algorithm that spits out biased results given biased data? Could this be a form of unlawful/unethical discrimination?

PRIVACY

Concerns about privacy have been everywhere lately, and that is because the issue is very complex. First of all, people are concerned about the lengths the U.S. government has gone to keep Americans safe. This has included large amounts of data collection on cell phone and Internet communications – like the NSA collecting more than 200 million text messages a day and putting tracking software on more than 100,000 computers around the world. Before this constant stream of new, crazy information began to be leaked by Eric Snowden, many Americans were in the dark about the truly amazing technology the government was using. The President has made it clear after the huge public outcry that the NSA will reform its methods of data collection, but maybe the government will just get better at hiding it? We may never know.

This is all without even discussing the privacy issues sitting in the palms of our hands. Our computers and phones, along with the websites we go on every day (see: Google, Facebook), are constantly collecting information on what we see and do. Unless your last name is Obama or Gates, no one really cares what you, individually, are doing online, but all of that information collected in mass is very valuable to advertisers and large companies – all they want is to target their ads to you in creative, but sometimes creepy ways.

One of the biggest trends in computer science both in industry and in academia is the somewhat nebulous notion of "big data": tools and methods that gather and analyze immense amounts of data, often about individual people. This leads to both broad conclusions about the whole population and narrower conclusions about single individuals like you.

Big data technology has put an unprecedented amount of power in the hands of corporations and, especially, the government. Where in the past the government was limited in how they could conduct surveillance—following a single person was expensive, so they could only do it so much—now it can effectively follow everyone, everywhere, all the time. Okay, that might be a bit of an exaggeration, but it's close: as recent revelations from Snowden, Wikileaks and others have confirmed, the government was actively monitoring vast swathes of internet communication. A decade or two ago this would have been impractical, but with new technology that can find needles in unthinkably large haystacks this sort of tracking is incredibly powerful.

PROGRAMMING?

20 controversial programming opinions

http://programmers.blogoverflow.com/2012/08/20-controversial-programming-opinions/