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

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AI

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. What if computers became so intelligent that they are able to exhibit emotions and feelings – 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 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? There are also concerns about artificially intelligent computers taking away the jobs of humans. 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 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.

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.

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