H.378: An act relating to the creation of the Artificial Intelligence Commission

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Artificial intelligence:

"Artificial intelligence (AI), the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. The term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience."

-Encyclopedia Brittanica

https://www.britannica.com/technology/artificial-intelligence

In H.378, "artificial intelligence" means any technology capable of simulating human consciousness or that exhibits conscious thought.

Examples of common use of artificial intelligence

- Google Maps
- Autopilot
- Spam filters
- Plagiarism filters
- Fraud protection
- Credit decisions
- Facebook
- Voice-to-text
- Siri

https://www.techemergence.com/everyday-examples-of-ai/

Artificial Intelligence Commission

- To investigate the field of artificial intelligence and make recommendations to promote the responsible growth of Vermont's emerging technology markets,
- To explore how to allocate rights and duties among human beings and artificial intelligence entities when robots or other artificial intelligence entities create benefits,
- To consider how artificial intelligence entities could be used in State government, including an analysis of the fiscal impact, if any, on the State.

First Report of the Artificial Intelligence Commission

1. a proposal for a code of ethics for the development of artificial intelligence,

2. a proposal for a test or other method to determine whether an artificial intelligence entity has achieved consciousness,

3. a proposal for how the State could promote the ethical development of artificial intelligence, including an analysis of the potential risks and benefits of such development,

4. a proposal for how the State could support the development of artificial intelligence entities, integrate artificial intelligence into education, and provide incentives to support artificial intelligence businesses within the State.

Code of Ethics

There has been international work done in this area. The commission could review this body of work and adopt a code of ethics for Vermont. Here is one example:

- Human Rights
- Prioritizing Well-Being
- Accountability
- Transparency
- Technology Misuse

IEEE (originally: Institute of Electrical and Electronics Engineers)

https://standards.ieee.org/develop/indconn/ec/ead_general_principles_v2.pdf

Consciousness Test

The Turing Test: proposed (1950) by the English mathematician Alan M. Turing

"if a computer acts, reacts, and interacts like a sentient being, then call it sentient. To avoid prejudicial rejection of evidence of machine intelligence, Turing suggested the "imitation game," now known as the Turing test: a remote human interrogator, within a fixed time frame, must distinguish between a computer and a human subject based on their replies to various questions posed by the interrogator. By means of a series of such tests, a computer's success at "thinking" can be measured by its probability of being misidentified as the human subject." - Encyclopedia Brittanica

https://www.britannica.com/technology/Turing-test

Potential benefits of artificial intelligence

- Improve efficiency of government

- Solve some of our greatest problems

- Promote economic development

Improve efficiency in government

Transportation- autonomous vehicles and traffic signals could improve road safety and maximize energy usage.

Health Care- precision medicine could improve diagnosis, prevention, and treatment efforts.

Cybersecurity- early detection of cyberthreats and faster response could improve integrity of technology systems.

Finance- predictive analytics could improve financial decisions.

-Nvidia Corporation

https://www.nvidia.com/en-us/gtc-dc/leadership-in-ai/

Solve some of our greatest problems

IBM Watson, an artificial intelligence, can be used to solve many problems.

https://www.ibm.com/watson/products-services/

Lawyers are using this artificial intelligence to explore legal decisions. Over 100 UK human lawyers held a competition with artificial intelligence "lawyers" in October 2017. The artificial intelligence had an 86% success rate compared to 62% for humans.

https://blog.rossintelligence.com/happening-now-100-lawyers-are-competing-against-ai-software-c6a53f201715

Promote economic development

Could Vermont be attractive to artificial intelligence developers?

"Despite many of its services being blocked in China, Google has chosen Beijing as the location for its first artificial intelligence research center in Asia."

"China wants to become a superpower in an industry that's expected to significantly shape the future of the human race. Russian President Vladimir Putin predicted in September that whoever becomes the leader in artificial intelligence "will become the ruler of the world.""

"The Chinese government is aggressively using artificial intelligence for surveillance of its citizens, raising concerns among human rights groups."

http://money.cnn.com/2017/12/13/technology/google-ai-research-center-china/index.html

Potential risks of artificial intelligence

- Safety issues

- Exploitation

- Unpredictability

- Conscious machines

Safety Issues

What happens if a self driving car malfunctions? What about lethal autonomous weapons systems?

"I have exposure to the most cutting-edge AI, and I think people should be really concerned by it," says Elon Musk. "AI is a fundamental risk to the existence of human civilization in a way that car accidents, airplane crashes, faulty drugs or bad food were not — they were harmful to a set of individuals within society, of course, but they were not harmful to society as a whole."

https://www.cnbc.com/2017/11/27/elon-musk-robots-of-the-future-need-to-be-regulated.html

https://www.unog.ch/80256EE600585943/(httpPages)/8FA3C2562A60FF81C1257CE600393DF6?OpenDocument

Exploitation

What happens if facial recognition technology is abused by criminals? By the government?

"The biggest danger is that this technology will be used for general, suspicionless surveillance systems. State motor vehicles agencies possess high-quality photographs of most citizens that are a natural source for face recognition programs and could easily be combined with public surveillance or other cameras in the construction of a comprehensive system of identification and tracking."

https://www.aclu.org/issues/privacy-technology/surveillance-technologies/face-recognition-technology

Unpredictability

What happens when a machine exceeds its' original programming?

"the model that allowed two bots to have a conversation—and use machine learning to constantly iterate strategies for that conversation along the way—led to those bots communicating in their own non-human language."

"Already, there's a good deal of guesswork involved in machine learning research, which often involves feeding a neural net a huge pile of data then examining the output to try to understand how the machine thinks. But the fact that machines will make up their own non-human ways of conversing is an astonishing reminder of just how little we know, even when people are the ones designing these systems."

https://www.theatlantic.com/technology/archive/2017/06/artificial-intelligence-develops-its-own-non-human-language/530436/

Conscious machines

What happens when an artificial intelligence becomes self-aware? At what point do machines deserve rights? Meet Sophia, the first robot citizen of Saudi Arabia.

"It will take a long time for robots to develop complex emotions and possibly robots can be built without the more problematic emotions, like rage, jealousy, hatred and so on. It might be possible to make them more ethical than humans," she said.

She added, "I foresee massive and unimaginable change in the future. Either creativity will rain on us, inventing machines spiraling into transcendental super intelligence or civilization collapses."

Last month, Saudi Arabians were up in arms over Sophia because she doesn't "cover up," or abide by the country's strict dress code for women.

She was granted citizenship at a tech conference in Riyadh in late October."

http://www.businessinsider.com/interview-ai-robot-sophia-hanson-robotics-2017-12

Conscious machines

Meet Bina48, resident of Vermont:

"Bina48 is one of the world's most advanced social robots based on a composite of information from several people including, Bina Aspen, co-founder of the Terasem Movement. She was created using video interview transcripts, laser scanning life mask technology, face recognition, artificial intelligence and voice recognition technologies. As an "ambassador" for the LifeNaut project, Bina48 is designed to be a social robot that can interact based on information, memories, values, and beliefs collected about an actual person.

As such, Bina48 is an early demonstration of the Terasem Hypothesis, which states:

1) A conscious analog of a person may be created by combining sufficiently detailed data about the person (a mindfile) using future consciousness software (mindware)." https://www.lifenaut.com/bina48/

https://www.youtube.com/watch?v=KYshJRYCArE

Recommendations

-set up commission or designate an agency to track the development of artificial intelligence and to recommend potential regulation

-create a statewide network of artificial intelligence developers and promote interstate and global collaboration

-consider ways that Vermont can benefit from the use of artificial intelligence to improve the function of government while protecting rights

-explore impact on the economy, including benefits and risks