

Publication: Fortune Online

Date: 09 April 2019

Headline: Eye on A.I.— Why You Should Be Concerned About China's Gains in Artificial Intelligence

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Chinese tech giants Baidu, Alibaba, and Tencent are rapidly improving their artificial intelligence, challenging current U.S. tech leaders like Google and Amazon.

China's so-called BAT companies, as New York University business professor and futurist Amy Webb calls them in her latest book, *The Big Nine*, get a big boost from their government's funding and tech-friendly policies. Government support has helped embed the BAT companies' technologies across China, in everything from mobile messaging and e-commerce, to digital payments and health care.

In an interview with *Fortune*, Webb contrasted the relationship between China's government and that country's A.I. titans with their U.S. counterparts and the Trump Administration. In short, the gap is huge—and it could have profound implications for the U.S. economy.

The White House and Pentagon have "very little understanding of what A.I. actually is and how it actually works," Webb says, mincing few words. This hampers the U.S. government from implementing A.I. policies similar to China's that are aimed at creating a skilled workforce.

In China, some grade school children are taught A.I.'s fundamentals. In the U.S., well, not so much.

Meanwhile, some U.S. tech workers are at war with their government, exemplified by Google's employees protesting the search giant's military contracts that involve A.I. The tensions, Webb says, make it more difficult for the U.S. government to harness the best A.I. technology.

Her remedy is for U.S. tech companies to be more transparent about their government work. The more secretive they are the more they breed distrust.

At the same time, U.S. political leaders like Sen. Elizabeth Warren increasingly criticize the tech industry while accusing them of potential anti-trust violations. It's a sharp contrast to China, where corporations and government work together, including on luring back U.S. educated Chinese techies to work for Chinese companies.

In China, "nobody is going to be using their political campaigns to point fingers to garner votes," Webb says.

Eventually, she expects China to ingrain itself more into the economies of other countries, giving its BAT companies greater business access. Italy's recent decision to participate in China's Belt and Road Initiative, intended to spread Chinese infrastructure and products worldwide, foreshadows things to come.

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For example, China could encourage developing countries to adopt aspects of its A.I.-powered social credit system, a controversial approach to giving individual citizens the equivalent of Yelp scores that factor into everything from getting loans to being able to travel. It may not be this year or the next year, Webb says, but perhaps 10 years from now, eventually weakening the U.S. government and the influence of U.S. tech companies worldwide.

“I think democracy is at stake—I’m not joking,” Webb says. “I think our way of living is at stake and the future of how we do business globally is at stake.”

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A.I. IN THE NEWS

Amazon faces some A.I. angst. Several leading A.I. researchers, some of whom work at **Google** and **Facebook**, are urging **Amazon** to stop selling the company’s facial-recognition software to law enforcement agencies, reported *The New York Times*. The researchers, which include recent Turing Award winner and deep-learning pioneer **Yoshua Bengio**, are concerned that the technology is less effective when used on women and people of color, and could be used to discriminate against minority communities. Amazon has previously disputed a study of the company’s technology that prompted the researchers’ concern.

That was fast. Google has shuttered its A.I. ethics council a little over a week after it debuted, reported Vox. The search giant faced intense criticism from both Google employees and outsiders who questioned the beliefs of some of the council members, including one who was described as having “vocally anti-trans, anti-LGBTQ, and anti-immigrant” views.

Helping A.I. bloom. **Intel** said it plans to invest \$117 million in 14 startups, many of which are focused on “creating powerful artificial intelligence platforms.” One of the startups Landing AI was founded by deep learning expert **Andrew Ng**, who helped build A.I. systems at **Google** and **Baidu** and was the co-founder of online education company **Coursera**.

Salesforce’s Singapore sling. Salesforce opened an A.I. research center in Singapore, which the enterprise software giant said is its first A.I. hub outside of its current Palo Alto A.I. center. Dr. Steven Hoi, who was an associate professor of information systems at **Singapore Management University**, will lead Salesforce’s research team in Asia. Other tech companies that have A.I. research centers in Asia include Google (Beijing), Microsoft (Shanghai), and Amazon Web Services (Shanghai).

DATA SCIENCE TEAM BUILDING

Companies that are building data science teams should ensure that their data wizards have multiple skills and not simply specialize in one, according to an article in the *Harvard Business Review* by Eric Colson, the chief algorithms officer at **Stitch Fix**. Colson believes that “generalist roles provide all the things that drive job satisfaction: autonomy, mastery, and purpose.”

EYE ON A.I. TALENT

Apple named **Ian Goodfellow** as its director of machine learning for its special projects group. Goodfellow, previously a **Google** senior staff research scientist, is widely respected in the A.I. community for his work on generative adversarial networks, or GANs, which is an A.I. technique used to create realistic, but fake images, among other tasks.

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Enterprise startup **ThoughtSpot** has hired **Cindi Howson** to be its chief data strategy officer. Howson was previously a vice president of research at **Gartner**, where she specialized in business analytics and intelligence.

StubHub has hired **Arnie Katz** as its chief product and technology officer. Katz was previously the vice president of international eCommerce at **Walmart**.

EYE ON A.I. RESEARCH

A.I.'s embryonic debut. **Weill Cornell Medicine** researchers published a paper detailing how deep learning could help identify whether a human in vitro fertilized embryo will result in a successful pregnancy. The researchers trained a neural network—software that learns from data—on thousands of time-lapse images of human embryos.

Dr. Iman Hajirasouliha, a computational genomics professor who co-authored the study, told *Fortune* that he believes this is the first time a peer-reviewed paper has been published about using deep learning to analyze images of human embryos. He said that similar work has been published about using deep learning to study cow embryos.

Hajirasouliha hopes that his team's research will eventually be used to help embryologists select the right embryos for patients undergoing in vitro fertilization.

"I think this is important because essentially we want to reduce all these complexities in pregnancies," Hajirasouliha said.

FORTUNE ON A.I.

How Artificial Intelligence Could Humanize Health Care – By Danielle Abril

Want a Better Health System? You Need A.I. (And Here's Why) – By Sy Mukherjee

Google Workers Want Heritage Foundation President with 'Anti-LGBTQ' Views Off A.I. Council – By Beth Kowitt

BRAIN FOOD

A neural network unhinged. *Bloomberg News* published an investigation into Google's YouTube and its Facebook-like role in spreading misinformation and conspiracy theories to the public. The article explains how YouTube's service relies on a neural network to recommend videos to users. Although the neural network helped increase the number of hours people watched videos, many of those videos contained controversial content from anti-vaccination advocates or conspiracy theorists. The article suggests that the neural network's creators didn't consider that the software could spread "misinformation, political extremism and repellent kid's content," because those topics "rarely came up before the 2016 U.S. election." YouTube executives reportedly ignored the problem after some employees raised concerns. YouTube told the publication that it's updating the service's "recommendations system to prevent the spread of harmful misinformation," as well as a number of other measures.