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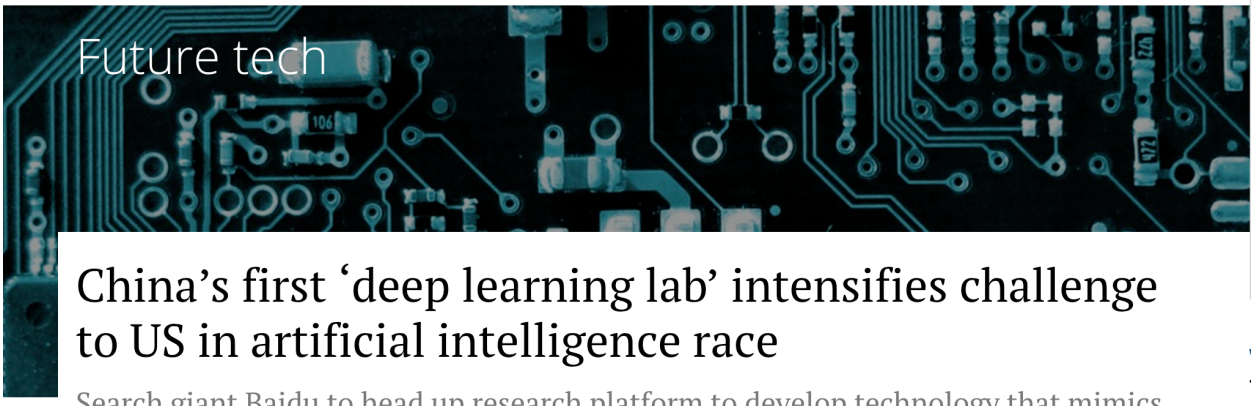


China's first 'deep learning lab' intensifies challenge to US in artificial intelligence race

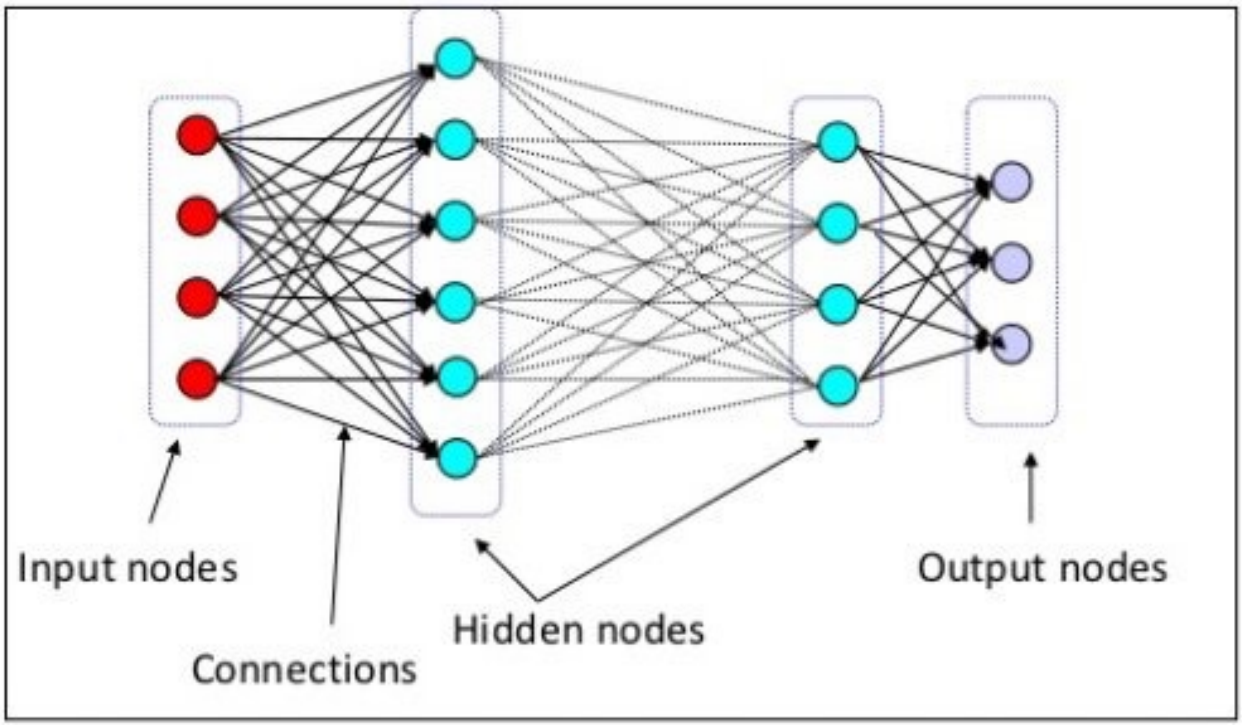
Search giant Baidu to head up research platform to develop technology that mimics human thought

Today I am going to talk about how big countries prepare for the future of AI. I will mainly focused on the news that "China's first 'deep learning lab' intensifies challenge to US in artificial intelligence race" [1], and then also combine with similar plans of Japan and U.S..

Beijing has given the green light for the creation of China's very first 'national laboratory for deep learning', in a move that could help the country to surpass the United States in developing artificial intelligence (AI). The lab will not have a physical presence, instead taking the form of a research network predominantly based online.

The NDRC has commissioned Baidu, operator of the country's biggest online search engine, to lead the charge in creating the lab, working in partnership with China's elite Tsinghua and Beihang universities, as well as other Chinese research institutes. Beijing-based Baidu confirmed on its official WeChat account on Monday that the lab will focus on seven areas of research including machine learning-based visual recognition, voice recognition, new types of

human machine interaction and deep learning intellectual property. The overarching goal, it stated, is to “boost China’s overall competence in artificial intelligence”. The lab is expected to help China make bigger waves in the competitive field of AI, a technology often regarded as a holy grail of the digital era and a key area in which Chinese researchers and enterprises are rapidly closing the gap on their western counterparts.



The lab deals with deep learning, but what is deep learning?

Regarded as one of the most exciting and fastest-growing areas of AI, deep learning - a subdivision of machine learning - involves feeding data through virtual neural networks designed to mimic the human brain’s decision-making process, in order to solve problems and recognise images and sounds. It is seen by many as the key to elevating AI to something approximating human intelligence, and is already credited with major breakthroughs in technologies such as

voice recognition in smartphones, i.e. Siri. Above is a image showing the basic process. In a deep network, there are many layers between the input and output, allowing the algorithm to use multiple processing layers, composed of multiple linear and non-linear transformations.

So what's the influcence brought by this lab?

"As an open platform itself, the national lab will help more Chinese researchers, companies and universities to access the most advanced AI technologies in China," said Yu Kai, the former head of Baidu's deep learning institute.

Also I want to mention another news that similar AI start-up can be seen in another technological power-- Japan[2]. The Tokyo Institute of Technology has announced plans to build a new supercomputer designed to accelerate Artificial Intelligence (A.I) research. The GPU computing platform merges AI with HPC, accelerating computation so that scientists and researchers can drive life-changing advances in such fields as healthcare, energy, and transportation.

This is the photo of TSUBAME 3.0, and it looks really complicated. Excelling in AI computation, TSUBAME3.0 will be Japan's highest performing AI supercomputer when operated concurrently with its predecessor.

We see from above, from the aforementioned articles that both China and Japan are trying their best to develop AI technology, in order to help them solve problems that once are thought unsolvable. However, the U.S., which has been developing AI for decades with a great ecosystem that is made of big name companies, universities and engineers, is thinking more.

We all know that it will still take 20 or 30 years before AI is commonplace in our society, but we can make decisions now that will help us once AI is fully incorporated into our economic

life. There's no denying that AI could be a double-edged sword for the economy, and of course, not just for the economy.

First, automation through AI will likely "increase productivity and create wealth," and increase demand for skills associated with AI development. So after graduation, if you are lucky enough to be hired by some high-tech companies and do researches on AI field, then you definitely gonna make a lot of money. But, on the other side, it could also reduce demand for skills that could be automated away, and increase the wage gap between people with different levels of education. We won't have human beings working in Mcdonalds, instead, AI will serve us foods and drinks.

Second, it's the safety issue for all human being that we need to concern. We should never underestimate the risk brought by the development of AI, since there is a lack of any legislation on the evolution of the AI. Tesla CEO Elon Msuk once said that "if I were to guess what our biggest existential threat is, it’s probably that. So we need to be very careful with the artificial intelligence".

In my opinion, the development of AI can be divided into two periods, and we are now standing at the beginning point of the first one. In the near future, the machines will do a lot of jobs for us and not be super intelligent. The modern society will benefit from the advantages intelligent machines bring, so this will allow the rapid diffusion of the Artificial Intelligence in every industry. But a few decades after that, the intelligence is strong enough to be a concern. Maybe the artificial Intelligence could create a new generation of machines that could soon become the most dominant species. Just as Elon Musk once said “maybe, with artificial

intelligence, we are summoning the demon". To sum up, it's our primary mission to develop AI technology now, but we also need to bear in mind that the risk we are taking.

References

1. "China's first 'deep learning lab' intensifies challenge to US in artificial intelligence race", *South China Morning Post,* 02/21/2017. (http://www.scmp.com/tech/china-tech/article/2072692/chinas-first-deep-learning-lab-intensifies-challenge-us-artificial)
2. Hamilton, Mark, "Tokyo Tech to Build Japan's Fastest AI Supercomputer Using NVIDIA's Accelerated Computing Platform", *Blog Nvidia,* 02/16/2017. (https://blogs.nvidia.com/blog/2017/02/16/tsubame3-ai-supercomputer/)