

# AI Superpowers: China, Silicon Valley, and the New World Order by Kai-Fu Lee Book Summary

There is a race between China and the U.S. for AI's development. AI will have the technical ability to eliminate 40% to 50% of jobs in the U.S. This estimation is alarming, but it is important to mention the “technical ability” qualifier. China has significant advantages to lead the industry now. Within a decade, China will overtake the United States as a global leader in artificial intelligence forcing smaller countries to align behind. Kai-Fu Lee says China's advantage in AI development goes beyond the competitive edge.

## Praise to improvement in deep learning and machine learning we're on the edge of an AI economy.

Until recently, if people were talking about artificial intelligence (AI), it was likely in the context of science-fiction movies. But these days, everyone from schoolkids to managers are wondering what kind of things AI brings for us in the coming years.

In fact, when the author gives talks at schools and executive conferences, he's found that Chinese students ask him the same questions as CEOs, such as, “Are we going to have AI teachers?” , “What kind of jobs are we going to have in the future?” or “What kind of jobs are we going to lose in the future?”

While the appearance of real-world AI can seem like a relatively new thing, it's been on the stage for decades and has only now started being a major business tool thanks to a breakthrough in deep learning and machine learning.

The story of how we got to deep learning stretches back to the 1950s when researchers like John McCarthy and Marvin Minsky had a goal of imbuing computers with human

intelligence. And when the author started getting involved in this area in the early eighties, there were two camps working toward this: the rule-based people and the neural network folks.

Rule-based AI believed that the best results would come from programming machines with one rule at a time, such as “cats have triangular-shaped ears.” The neural network camp, in their way, preferred to let the machine learn on its own, much as humans do, through experience. This way, a machine can analyze a picture of a cat and respond incorrectly, but this error will become data that it learns from.

What neural network-based AI really needed was loads of data to analyze and faster computing power, which finally arrived in the mid-2000s. We have had faster chips and microprocessors. With the improved conditions, AI researcher Geoffrey Hinton was able to finally add the right amount of layers to the “neurons” and essentially multiply the AI processing power to a whole next level.

When this happened, the neural network was renamed to deep learning. The big breakthrough was made public at a 2012 contest when Hinton’s new AI algorithm blew away the competition at visual recognition.

Suddenly, AI was capable of handling complex problems, knowing patterns and coming up with amazing results. It was clear that this technology was now applicable to a whole array of daily functions, including visual and audio recognition, language translation, making complex financial decisions and even driving a car. Thanks to deep learning, an AI economy was on the way.

## Over the last years, China has gone from that who copies things to top challenger.

In China, artificial intelligence had a big jump in 2016. It happened when the AI program known as AlphaGo beat the champion Go player, Lee Sedol in a three-game tournament.

These games had 280 million Chinese viewers glued to their TVs, and many were sad when the visibly emotional Lee admitted defeat. But rather than breaking the people's spirit, the people of China became inspired to harness the power of AI to their advantage – much like the launch of the Russian satellite, Sputnik, competed with Americans to be the first on the moon.

And just as President John F. Kennedy declared US intentions to land on the moon, following the Go tournament, the Chinese government issued a rallying cry declaring their ambition to become the global leader of AI innovation within the next ten years. This is particularly important since just a few years prior, China was known more for being a hub of copycat technology producer than for its innovation.

Indeed, in the early 2000s, China was copying every successful Silicon Valley product. This caused many in the West to write off China's abilities as an innovative competitor. What the doubters failed to recognize though is that by being copycats, Chinese entrepreneurs were actually finding out ways how to make their own world-class products.

The best example may be Wang Xing, who created clones of Friendster, Facebook, Twitter, and Groupon sites. In doing so, Wang not only learned how to design good products, he became a battle-hardened competitor who knew how to thrive in the cutthroat Chinese market. So by the time he turned his attention to his group discount service Meituan, he was ready to outperform Groupon itself.

This time around, Wang didn't copy the interface. He optimized it Chinese-friendly with densely-packed page designs. He also held back from overspending early on to woo customers and instead spent money for the long-term win by signing exclusive deals with vendors and creating a fast and reliable payment system.

Unlike Groupon, Wang didn't try to coast on one idea, either. He expanded and offered new products based on whatever was popular at the time, including movies, food delivery and local tourism. So, by 2014, Groupon was on the decline, selling for less than half its IPO, while Meituan was becoming the fourth most valuable start-up in the world.

# China's uncommon online world makes it a big opportunity for the kind of data that AI needs.

There are some major differences between Silicon Valley's and China's start-ups, and a big one is having what's known as a light or heavy touch.

When a business has a light touch, it does one thing and leaves a lot of the particulars surrounding that service for others to deal with. They leave some spaces for others. This is the style of Silicon Valley companies like Uber, which connects people with a ride, but doesn't deal with gas and car maintenance.

The Chinese equivalent of Uber is Didi, and Didi also owns the gas stations and repair shops that keep their rides in service. This heavy touch model is preferred in China since it generally makes it more difficult for a copycat start-up to fully duplicate a service.

Having a heavy touch and controlling all aspects of a service can also lead to more data, which is so important to a good AI product. They feed AI databases. Already, China is sitting on the world's biggest data goldmine. This is especially true when it comes to Tencent, the company behind WeChat, a certifiable super-app that people use for just about everything.

To understand the phenomenon of WeChat, it's important to understand that most Chinese people are mobile-first internet users, which means that their first internet experience starts with a cheap smartphone, rather than a PC. With this in mind, WeChat has become the mobile app that lets you do everything you'd want to do with a PC.

Thanks to mini apps within WeChat, you can not just chat with friends, but you can also order food for delivery, buy groceries, unlock a shared bike, buy movie tickets, purchase plane tickets, book a doctor's appointment, order a prescription, and secure some stocks – all without leaving WeChat.

Many of these functions are made possible by another mini app: the WeChat Wallet, which was introduced on Chinese New Year 2014. Every New Year's Day, there's a tradition of

sending loved ones a red envelope with money inside. WeChat allowed users to do this electronically, with no transaction fees, and it was such a success that upon launch, five million people linked their bank accounts to WeChat and sent 16 million electronic red envelopes.

After the usage of WeChat Wallet, China has become an increasingly cash-free society. That's a lot of data under one roof, making it increasingly clear what people like to buy, where they travel and a whole lot more. They analyze the data that user produce.

## China is the top superpower about internet AI, but not business AI.

The arrival of AI in our everyday lives is coming in four different waves.

The first is internet AI, and it's already here. YouTube recommends the videos for you to watch based on an AI algorithm, and services like the Toutiao app not only recommends articles, it automatically generates them as well.

As for who is the leader in internet AI, the author sees the US and China as neck and neck for now, but in five years, he predicts China will have a 60-40 advantage in terms of being able to dominate the market. The reason is China has more internet users than the US and Europe combined, and a population ready to make mobile payments to content creators. Already apps like WeChat Wallet gives a chance the people to send micropayments of a few cents to online content creators they like, and this type of environment is going to lead to innovative content from empowered creators – giving China the slight edge.

The second wave is business AI, and this is the category where the US really has an advantage. Business AI is already emerging, with algorithms making decisions on financial portfolios and bank loans. China does have some impressive mobile services already, like Smart Finance, which makes loans without taking into account financial history or your zip code. Instead, it uses unique metrics like how long it takes you to answer certain questions and how much battery power your device has. In doing so, it's proven to be a reliable loan

service for migrant workers and other populations that don't have bank accounts, and the percentage of defaults is only in the single digits. Without historical data, it will take time to go further.

However, one area of data China lacks is business records. Compared to China, the US has an impeccable history of record keeping, with databases full of banking, hospital and other business transactions. For this reason, the US is in a great position for business AI and the author gives America a 90-10 advantage here. The five-year prediction is slightly better for China, with the US advantage cut to 70-30.

## China advances game sector in perception AI, but the US has an early lead in autonomous AI.

The third wave of AI is perception AI, which includes voice and facial recognition programs. China has an advantage here, due in part to cultural differences. Americans have many "Big Brother" fears about their image and voice being captured, while the Chinese are more agreeable to the idea of giving up some privacy in return for more convenience.

Perception AI has the potential to be an exciting area as it removes the obstacles of online and offline. This is why this technology often falls under the category of online-merge-offline (OMO).

One OMO application we'll be seeing more of is the smart grocery store. Imagine grabbing a grocery cart that scans your face, recognizes you and brings up your shopping list. In doing so, it greets you in the voice of your favorite actor. And since it scans everything you put in the cart, it can stop you before you reach the checkout counter if you forgot anything. It could even remind you of your loved one's favorite brand of wine as you approach that section.

China is already making the Xiaomi line of products, which turn your home into a voice-activated, AI-enhanced place. Due to a local manufacturing hub in Shenzhen, these

products, which include speakers, refrigerators, rice cookers, and vacuum cleaners, are very cheap. China's manufacturing advantage and US privacy concerns, give China a 60-40 lead now, and the author expects it will grow to 80-20 in five years' time.

The fourth and final wave is an autonomous AI. So far, we haven't even gotten close to the kind of technology that gives robots human-like intelligence, and it's possible that we never will. But we do have drones, which are becoming more advanced and machines that can recognize the color of a ripe strawberry and gently pick them. Google and Tesla are also transforming our motorways with driverless cars, which will be rolled out in years to come.

So, the US currently has a big lead in autonomous AI, which the author puts at around 90-10, but China is eager to catch up. In fact, the Chinese government is very proactive for handling AI-friendly policies and regulations, so it will be easier to implement this technology on a wide scale. Already, China is building a highway and an entire city the size of Chicago especially designed for AI vehicles. So in five years' time, it'll be closer to a 50-50 split.

## Experts think that AI will lead to a utopia or dystopia.

These days, when economists and researchers debate about what a world with an AI economy looks like, they tend to fall into two different sides.

Famed geneticist and researcher, Ray Kurzweil, is in the utopia camp. He sees machines as being the supreme tool for humans to enhance our bodies and minds, allowing us to become smarter and live longer. Similarly, AI researcher Demis Hassabis sees AI as the tool that will allow us to finally cure disease and solve problems like global warming.

In the dystopia camp, there's entrepreneur Elon Musk and physicist Stephen Hawking, who think AI's potential represents a very serious threat to humanity. For example, an AI program could be asked to solve global warming and see not to have humans as the best option.

Opinions differ among economists as well, and much of the debate has stemmed from a 2013 study by Oxford University, which found 47 percent of US jobs to be at risk over the next 20 years due to increasing automation. Lee's controversial prediction that within 15 years, AI will have the technical ability to eliminate 40% to 50% of jobs in the U.S.

Of course, most companies will be eager to cut costs and increase profits if they can automate certain tasks. And this brings us to an important difference in the reports that came after the 2013 Oxford study: Most of the automation that AI is currently capable of allows for certain tasks to be automated, but not entire jobs.

For example, an automated tax advisor could do certain tasks, like calculate tax returns and check for inconsistencies, but it can't have nuanced conversations with clients.

With the difference between tasks and entire jobs in mind, more reports followed. According to the Organization for Economic Cooperation and Development (OECD), only 9 percent of US jobs were at risk due to automation. In a 2017 report by PriceWaterhouseCoopers (PWC), 38 percent of US jobs were at risk, while McKinsey Global said that around 50 percent of tasks worldwide are "already automatable."

This is quite a range, and it's a big reason why economists remain divided on the issue. The author tends to agree with the PWC report while thinking that the actual number of displaced workers may even be higher.

This is because the reports didn't take into consideration ground-up displacement, which will come from businesses like Smart Finance and Toutiao, which don't employ any loan officers or editors. So these businesses won't be adding automation and firing employees, rather they'll displace loan officers and editors from the ground-up by not offering them a position in the first place.

## Book Review

Lee finishes by mentioning that he is proud of his success as an AI researcher and scientist. But he also regrets that his priorities have been misplaced. "Instead of seeking to increase

the potential of the human brain,” he laments, “I should have sought to understand the human heart.” While some worry that an AI economy will result in devastating job losses, if we shift our values toward rewarding human-to-human jobs such as caregiving and community-based work, we may emerge as an even better society and improve the world we live in. He adds such concepts as universal basic income, guaranteed minimum income, and job sharing.

<https://goodbooksummary.com/ai-superpowers-china-silicon-valley-and-the-new-world-order-by-kai-fu-lee-book-summary>

