

Poaching Waymo Leader Zhang Yimeng and Another Half Year for Pony.ai

Note: These are Jeffrey Ding's translations. Jeffrey Ding is a researcher at the Future of Humanity's Governance of AI Program. As a Boren Scholar, he directly enrolled in classes with Chinese undergraduates at Peking University, and interned at a Chinese law firm. Others are welcome to share **excerpts from these translations as long as my original translation is cited. Commenters should be aware that the Google Doc is also publicly shareable by link. These translations are part of the ChinAI newsletter - weekly-updated library of translations from Chinese thinkers on AI-related issues: <https://chinai.substack.com/>*

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Original mandarin:

https://mp.weixin.qq.com/s/9bqSILUvtBZ4EHSGRfBzzg?fbclid=IwAR0bi6mIYExQe9_33ZMTU90mDQpGwKx-72dKkqo7wh_QCHEbTlqs6ErLMC0

The world changes with the passing of time. The flow path of top technical talents has changed.

In the past, the path of (Pony.ai's) founder Tiancheng Lou was like this:

PhD graduation → Google → Baidu → Founding Pony.ai.

Now, Zhang Yimeng's path has turned into this:

PhD graduation → Google → Pony.ai.

The path has become shorter, the attractive strength of startups has increased, and there are no middlemen taking their cuts.

But maybe you will be curious: Who is Zhang Yimeng?

Zhang Yimeng, the person

Zhang Yimeng, who comes from Google, has accumulated more than four years of experience in the area of unmanned vehicles and was one of the early employees of Waymo.

She led the research and development of technologies and applications for a number of key modules for unmanned vehicles in the perception area, including object detection and recognition, sensor fusion, and deep learning applications.

Earlier, Zhang Yimeng received her Ph.D. in computer vision and machine learning from Cornell University in 2012. She graduated from CMU with a master's degree and did her undergraduate studies at the Department of Computer Science at Kyoto University.

A very proper CV of renowned schools.

After graduating from her Ph.D. program in 2012, Zhang Yimeng joined Google and was

工作经历



Director and Head of Perception

Pony.ai

2018 年 8 月 – 至今 · 3 个月
Fremont



Tech Lead and Staff Software Engineer

Waymo

2017 年 1 月 – 2018 年 8 月 · 1 年 8 个月
Mountain View, California

Tech Lead in object (pedestrian, vehicle, etc) detection/classification.



Staff Software Engineer

Google

2012 年 10 月 – 2016 年 12 月 · 4 年 3 个月
Mountain View

In the self-driving car team. Works on the perception system on the car. Mainly focusing on object (pedestrian, etc) detection and classification.



PHD

Cornell University

2009 年 8 月 – 2012 年 8 月 · 3 年 1 个月
Ithaca, New York Area

Research focus: Computer Vision and Machine Learning



responsible for technology development in the Google Search group.

Then she entered the Google autonomous driving division, which later split off to become Waymo, where she became a senior engineer in the perception area.

But this is all in the past, now, Zhang Yimeng has become yet another member absorbed by Pony.ai's talent black hole.

In September of this year, she decided to formally join Pony.ai (小马智行) as a technical director to lead Pony's perception team.

However, the intermediate steps in between were not short and straightforward.

The China Opportunity

Zhang Yimeng recounted in her own words that her decision to leave Waymo was completed this spring.

At that time, a moment in time when the glow around Waymo was at the highest point according to the outside world: smooth trial operations, another new milestone in road tests, and the unmanned taxi fleet will start operations in Phoenix...

It seemed like Google's long-cherished ambition for more than a decade was about to take a historic step.

But it is also a case of the "big picture already being set", which allows Zhang Yimeng, who is in the prime of her life, to "go out and look around."

She said that Waymo is indeed very far ahead in the autonomous driving field, but it is not flawless. In terms of technological pursuits, because of Waymo's early start, there are some historical burdens in terms of technology that are difficult to avoid.

The scale of the company is large, and it is inevitable that the development process cannot balance speed and flexibility.

Most importantly, there is also the China factor. This girl from the northeast (of China), though she has always been studying abroad and working in Silicon Valley, also hopes to participate further in boosting China's AI.

And she has to admit that, for autonomous cars, China's data, application scenarios and technical challenges are unmatched in the world.

Therefore, regardless of whether it was the right time and place, or pursuit of pushing technology further a step, there was no better fit than returning to the motherland.

So she made up her mind and resigned from Waymo. Zhang Yimeng began to look for new opportunities in China's autonomous driving forces.

In the next few months, she was in touch with a circle of big companies such as BAT as well as small organizations such as Pony and other startups.

The final decision: join Pony.

The Charm of Pony

Zhang Yimeng said that there were two aspects for her personal standards:

First, on the technological plans, I hope that our beliefs and concepts are consistent and firm enough, determined and courageous to explore the autonomous environment, to get truly usable and reliable Level 4 (L4) unmanned cars on the ground.

Second, the team and the leaders have a heart of awe toward the development of technology and are driven by technology.

After a detailed discussion with Peng Jun and Master Lou, Zhang Yimeng was impressed by their ideas and thoughts. She said that she was convinced from the bottom of her heart.

Of course, there is a small detail for Zhang Yimeng to make up her mind. Pony also arranged for her to “interview” with the perception team staff.

Everyone knows that she will lead the perception team when she joins, but it is not as simple and rough as as a unidirectional leader. If you want her as a leader, everyone on the team can express their opinions.

But it is through such a “trivial matter,” that Zhang Yimeng feels the hidden culture and values of this company.

She decided to get in the car.

Comparing Waymo and Pony.ai

From Waymo to Pony, naturally it is not just the difference between a giant and a startup.

Behind it is the technological gap between the industry's "big brother" and the latecomers.

Zhang Yimeng does not shy away from the technological gap, but also does not think that the latecomers need the same time to reach Waymo's current achievements.

She herself came from a computer science class, and she has a Master's and PhD in computer vision. She has experienced the cold and heat of AI all along the way.

Zhang Yimeng recalled that she graduated from Ph.D. 6 years ago. Although she was a CV major, she also chose other groups in other research directions at Google. CV had not yet erupted.

But no one expected that the revolution brought about by deep learning would be so vigorous, and in the past two years or so, the imagination space of AI and various industries has all been re-assessed.

Zhang Yimeng said that before the establishment of a company like Pony, Waymo has already accumulated development of 8 years.

However, it does not mean that the gap between Pony.ai and Waymo requires 8 years of linear development to catch up.

The rush of deep learning and the possibility of productization of AI technology may be more beneficial to the latecomers.

For example, when the underlying system is polished, companies like Pony.ai can take fewer detours, flexibly adjust, and quickly iterate.

For the field of perception, specifically, Zhang Yimeng also believes that the Chinese landscape has other advantages.

She said that the technology's perception capabilities are stronger than the human driver's, but the key is the ability to deal with extreme scenarios, as well as the ability of machine learning systems to draw inferences about other cases from one instance.

In the second half of this year, the field of perception has also ushered progress, one after another, in intelligent vehicle infrastructure cooperative systems.

However, Zhang Yimeng does not believe that this will reduce the research threshold of intelligence for cars on their own, especially in terms of lowering the requirements for the perceptive capabilities of cars on their own.

She said that the biggest challenge facing perception will always be extreme scenarios, and dealing with similar emergencies is inseparable from intelligence of single cars.

However, the vehicle-infrastructure coordination will indeed improve the overall redundancy of autonomous driving, thereby improving safety.

Zhang Yimeng also divulged that in fact, Pony.ai has also carried out research into vehicle-infrastructure cooperative systems in Nansha, but this will not affect their determination to push forward intelligent cars (as standalone systems).

She also said that the first step will be to achieve unmanned vehicles operating urban environments, the second step will be private unmanned vehicles (operate along a wider range of routes), similar to the trend of AI to AGI, and ultimately the technology is everywhere.

Well then, what stage has Pony's self-driving car progressed to?

Another Half a Year for Pony.ai

To track the last public appearance of Pony's self-driving cars, one must trace it back to trial operations in Guangzhou Nansha in February this year.

In between, there was a financing announcement that valued it as a unicorn, but there were no disclosures of advances in product technology.

At that time in Nansha, the Pony's car looked like this:



What catches the eye are an old 64-line/new 32-line Velodyne laser radars, plus 2 monocular cameras.

But now, the layout of the sensor solution has changed a lot.



In addition to technical product solutions, the team size has also grown.

The current Pony is a 200-person self-driving car company, and aside from offices in Beijing, Silicon Valley and Guangzhou Nansha, they also have a Shenzhen office.

And the growth rate will be even faster. The annual recruitment target, revealed by a school recruitment announcement, is 100 people, which is 50% growth.

Master Lou also revealed that Pony's recruitment will not only be based on academic background or competitions, but what is more important is the ability to solve problems, and they care more about the ideas and methods to solve problems.

In terms of specific positions, the demand for hardware engineers is now larger than those who purely work on algorithms.

In the school recruitment, the teacher has been asked many times about the method of rapid learning.

Master Lou's answer has always been one sentence, and his consistent belief: Practice is the way, practice is the best way to learn.

Of course, a better learning method than practice is to come to Pony and practice with Master Lou.

But the Master is shy, leaving it only at that.