

Women In Automotive Interview Series

Part of Informa Tech Automotive Group's Summer Festival of Automotive.

In partnership with:



Meet Wei Luo, COO and Head of Product at DeepMap

1. Why did you get involved in automotive?

It has been a surprising journey! While I was a student, I never thought I would eventually work in the automotive industry. I became involved in automotive through my early interest in mapping. When I was younger, I was fascinated by the hand-drawn historical maps used by ocean explorers in past centuries. It made me think about how people and places are connected geospatially in profound ways. Seeing 3D digital maps for the first time in college, produced with aerial photogrammetry and LiDAR scans, was an eye-opener.



After college, where I majored in Urban and Environmental Planning, I completed my PhD in GIS (Geographic Information Systems) and Remote Sensing at UC Berkeley. This led me to Google, where I worked on geospatial technology for many years, for both consumer and enterprise solutions. This is when I first witnessed the power of machine learning to solve geospatial problems. In 2016, I joined DeepMap as founding COO and Head of Product. We develop technology to create highly-precise digital maps designed to be read by autonomous vehicles.

2. What are you most excited about that you are working on right now?

HD mapping is a powerful technology that will solve big challenges. A lot of people were in awe of Google Maps at the beginning. It was so amazing at the time, yet in a short time it has become a must-have commodity. We are at the same point now with HD mapping that we were in the early days of Google Maps. HD mapping is technically orders of magnitude harder than navigation maps. There is no ready-to-use solution on the market now, and I love the challenge of being able to work on the ground floor of this challenge. The self-driving challenge is endlessly interesting, as it intersects with many different technologies, such as machine learning, location data, and large data cloud processing.

3. How will your work impact the future of transportation?

Today, road networks around the world are at capacity. It's unrealistic to expand them, yet our population continues to increase. And, people want more mobility but want to spend less time actually driving a vehicle, especially on congested highways. How do you solve this? How do you give people more mobility and more time, within the existing infrastructure? I believe the answer will be found through autonomous vehicles, which will give people more time and flexibility (for working, socializing, etc.) while they are in transit, using our current road networks.

A note about transportation today - many issues are caused by poor planning and logistics. For example, so much time is wasted by people searching for parking. With self-driving technology, this will be solved.

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On top of that, a smart transportation system can leverage communications between cars and other cars. Think about cloud-based communications at a hub, where cars can be dispatched in a smart traffic pattern. For this, a good digital representation of the road infrastructure is important. This is one area where HD maps can play an important role.

4. What do you think is the greatest challenge facing the autonomous vehicle industry?

The ultimate challenge is safety, specifically, how do you solve for long-tail scenarios? On a small scale, we are already seeing self-driving projects up and running (shuttles, for example). In these limited cases, self-driving is working well, but this is not sufficient for the industry to take off. For massive market adoption, we will have to solve the corner cases. Currently, this is challenging for both machine learning and heuristics-driven approaches. The winners will be the companies that solve this. HD mapping is a big part of this, because you will need a prior memory of the environment. An accurate fresh map will increase the safety of the vehicle.

5. What is the biggest opportunity in autotech right now?

At DeepMap, we believe the industry is moving towards an ecosystem model, favoring integration of best-of-breed technologies and components. This model will leverage the expertise of a range of suppliers and tech innovators rather than relying on “full-stack” companies who build vehicles from top to bottom. Right now, this ecosystem is not mature, but you can see some companies forming partnerships to solve the problem together, instead of doing it from scratch.

6. How do you see today's global pandemic reshaping the AV industry?

We definitely see more interest in robo-delivery. People are getting very used to receiving packages at their homes, even from local vendors. Post-pandemic, I expect this trend will continue to grow. On the other hand, ride-sharing will likely continue to suffer. Even if there are measures to make people feel that the driver is safe (with regards to COVID-19), how can you monitor the health of the unknown people who have been in the car before you? I believe we will see more focus on robo-taxi innovation. This may be the only way for ride-sharing to survive.

7. Any predictions you want to make for 2020/2021?

We will see more alliances between strong partners. OEMs and Tier 1 suppliers will pour money into self-driving, especially L2+ consumer fleets. Additionally, I believe we will start seeing consumer-grade LiDAR adopted by OEMs in the next few years. This will be driven by an emphasis on safety combined with decreasing LiDAR costs. We will start to see LiDAR included in design decisions.

8. Why does diversity matter in this field? Anything in particular that you are doing to promote diversity in your company and/or our industry?

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To succeed, companies have to hire the best talent. If you are not open to diversity, if you are not looking at the total pool of talent, you will be missing access to people with valuable skills and perspectives.

9. What advice do you have for rising women in this space?

In general, there are few women in self-driving compared to other areas. I would encourage women who want to solve hard problems to look at a career in this field. It can expose you to many different cutting-edge technologies. Although self-driving may take a while for full-scale deployment, it is the future.

Thanks, Wei for taking the time to talk to us about your experience working in Automotive.

For more insightful intelligence, please visit the [Summer Festival of Automotive](#).