

# General context of road automation in China:

## New silk road:

Strategic project for road and sea commercial corridors. The official objective is to increase the commercial exchange capacity between China and Europe through a road network passing by Kazakstan, Ouzbekistan, Tadjikistan, Iran, Turkey. The idea is to reach Europe in 11 days by the road instead of 16 by the railway or 21 days by boat.

In China, this project is financing huge highway projects, from Xi'an to Xinjiang province (Wulumuqi). The research activities across all China benefit from these funds to generate new road concepts, full of technology (ITS) in order to foster the development of autonomous driving.

In this context, China is recruiting international experts all around the world to evaluate and participate in the design of their research project and I had this opportunity to work six months in Shanghai within Tongji University in the School of Transportation Engineering.

The main research topic of this research team at Tongji is to propose an infrastructure ready to welcome autonomously driven vehicles.

A huge project is in progress in the North of Shanghai in Automobile City. The objective is to coordinate simulated and experimental data in a real scale of a city in real time. Hardware: 10 6 DoF simulators, 1 datacenter, communication technology, F1 test track.

Why I think that China is the perfect playground for developing autonomous vehicle:

It has to be noted that China has a huge capacity to access data. In my first encounter with Tongji University, it was possible to work on taxi data (50k). Now, they propose to help researchers in accessing sensitive data (smartphone position) for all Shanghai.

Impressive academic trainings and methods. University students are selected among a massive population of candidates and higher is the degree, harder the selection is. Then, in their last year, students work one or two days a week in a company created by a university professor. This is very efficient so that the student is fully operational at the end of its cursus. Only the best students are selected to work in this kind of companies.

## New players:

Internet actors are now playing a major role on the development of autonomous vehicles. Baidu signed in 2015 an agreement with BMW and autonomous cars are tested in Beijing. Other actors are financing like Didi (equivalent to Uber in China). Those actors generally have the capacity to gather huge amount of data but also to process it with artificial intelligence methods. This is probably the core of autonomous vehicle development nowadays.

They also have a strong innovation capacity. Each young student want to live its Chinese dream and become millionaire. In the field of high tech this generates a lot of innovation, some by copying kickstarter or indiegogo ideas but a lot from pure Chinese ideas. Then, lots of incredible objects appear on TaoBao (Chinese Amazon owned by Alibaba group).

Telephone manufacturer like Huawei are also investing a lot on autonomous driving. They bring their knowledge about connectivity. As autonomous cars generates huge amount of data that need to be exchanged for map enrichment and traffic management, connectivity is also a key technology.