

Autonomous automobile: Jiading vehicles steer into self-driving phase

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The automobile sector in Jiading District is being steered into the self-driving phase as vehicles are “taught” to self-drive relying on smart chassis, more efficient computing power, cloud intelligence and deep learning.

Since SAIC Volkswagen, a joint venture between SAIC Motor and Germany’s Volkswagen, built its car manufacturing center in Anting in the suburban district in the late 1980s, the town now boasts more than 1,240 automobile companies.

Through creating better software, hardware and algorithm, Anting is forming an integrated automobile ecology on car research and development, testing, production and more application scenarios.

Self-driving is more than applying a computer on an automobile and replacing a driver with it. Many aspects, including sensors, algorithm and computing power of chips, contribute to a self-driving mechanism. And intelligent chassis is the backbone of a smart vehicle.

Currently, smart chassis is the focus for many newcomers and existing automobile companies in Anting Town.

A traditional chassis includes a car frame, suspension, driving and braking systems that mostly work independently. A smart chassis can achieve whole-car algorithm management through its controlling units, software and chips.

Smart chassis

SAIC Volkswagen and other leading automobile companies in Anting have made breakthroughs in smart chassis research and development.

IM, a battery electric vehicle brand under SAIC Volkswagen, has achieved its functions of sideways crab-walking and U-turn through cameras-backed road surface state recognition and the smart chassis.

In December 2024, ET9, a brand under electric vehicle giant NIO, whose global headquarters, R&D center and customer experience center is located in the Shanghai Automobile Innovation Park in Anting, received its steer-by-wire national mass production certificate.

ET9 is the world’s first model to integrate three major technologies of the SkyRide Steer-by-Wire, SkyRide Rear-Wheel Steering and SkyRide Full Active Suspension into a smart electric vehicle chassis system, bringing smart chassis technology to new heights.

Relying on an auto industrial base developed over 30-plus years, Anting is now able to coordinate a balanced development for the upper, middle and lower reaches of its auto industrial chain. Auto companies in the town are supported by a complete industrial ecology on R&D, manufacturing, test and client base within a radius of 10 kilometers.

The town has become a gathering place for top auto companies like SAIC Volkswagen, NIO and Li Auto, as well as seen its well-performing suppliers such as Tongyu Automotive and Daisch Intelligent Technology growing quickly into industry-leading players.

Clearer vision for a self-driving vehicle can be achieved through better sensors and higher algorithm ability.

Recently, a new sport utility vehicle model from Leapmotor, has reaped over 10,000 orders in the month since its launch. Anting-based Daisch Intelligent Technology has played a key role by producing the high-precision Inertial Measurement Unit for the model, which is noted for its high-speed and efficient navigate on autopilot, automatic emergency braking and road sign-recognition abilities.

“IMU can be compared to human being’s cerebellum,” said Lu Haifeng, deputy general manager of Daisch Intelligent Technology. “Together with cameras and laser radars — they are eyes of an automobile — IMUs enable a car to know its own movement and recognize real-world road surface conditions in a three-dimensional way.”

While the IMUs collect road surface condition information and transform them into data that a smart vehicle is able to understand, the computing power of the chips inside a car determines its reaction speed.

As an essential region for integrated circuit industry in the north of Shanghai, Anting Town focuses on developing its automobile chip segment. It has set up an automotive IC testing and certification platform, and has formed an IC industrial chain with its own intellectual property rights.

In recent years, the town has welcomed important chip design, production, testing and application companies such as Horizon Robotics and Hexagon Semiconductor to settle in Anting.

According to the district’s three-year (2024-26) action plan on building new infrastructures, Anting is further quickening its steps in building smart automobile supportive services and infrastructures.

Having had its smart chassis and clearer vision, a smart vehicle’s driving ability relies on algorithm.

Currently, the end-to-end technology enables a smart vehicle to learn the driving solutions from data of its sensors, so that the vehicle can cope with the complex traffic environment more flexibly.

In November 2024, the world’s first Human-Machine Cyber Racing Motorsports Challenge took place on Zhuzhou Circuit in central China’s Hunan Province. An autonomous driving system backed by Anting-based Hongjing Drive registered the fastest lap in 2 minutes 33 seconds, beating two top-tier human drivers.

The key technology applied in the race was the AI vision-based sensing algorithm.

“The new generation of vision-based sensing algorithm was for the first time applied into a small and medium-level computing platform by our research team, which paved the way for subsequent market entry of economic smart-driving products,” said Liu Feilong, founder and CEO of Hongjing Drive.

At present, Hongjing’s products have been used on more than 30 models with clients including Li Auto, SAIC Volkswagen, Chery, JAC, BYD and Geely.

With an early start and plan, Anting has secured a number of “firsts” in the country’s autonomous driving sector such as the first intelligent connected vehicles testing place and the first autonomous-driving demonstration zone.

In the next step, the town will deepen its commitment to technology breakthroughs and strengthen industrial chain coordinations to build a more complete intelligent connected vehicle ecosystem.

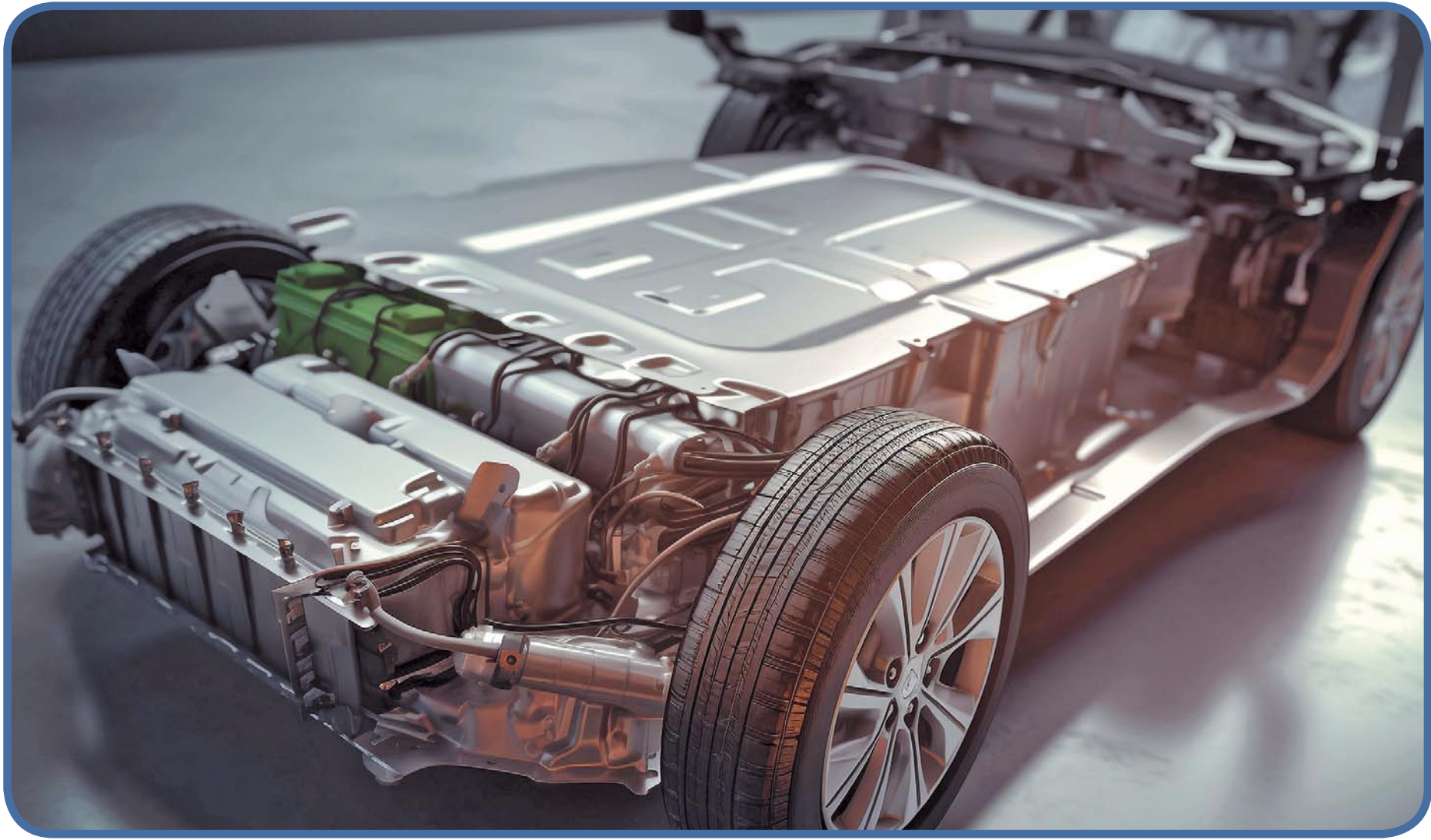


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Deputy general manager of Daisch Intelligent Technology

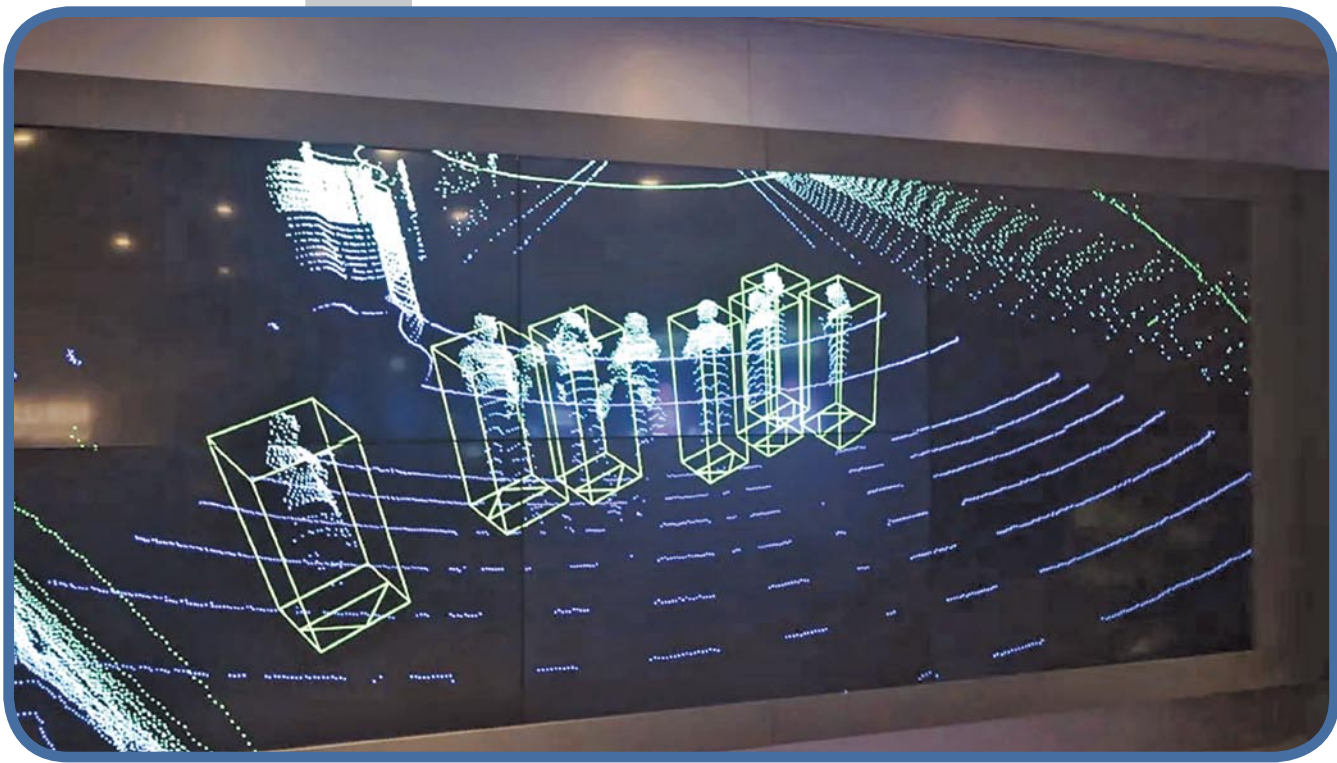


Shu Qiang, founder of Tongyu Automotive, a leader in key technologies for smart chassis systems. — Li Huacheng



Intelligent chassis is the backbone of a smart vehicle.

A driverless car is undergoing user beta testing in Shanghai’s urban areas.



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