

STMICROELECTRONICS X STERN TECH

Saving Lives on The Road by Detecting Abnormal Driver Behaviour

Stern Tech collaborates with STMicroelectronics
to ensure people's safety on the road.

The Challenge

Human errors account for up to 95% of road accidents, with speeding and driver distraction among the primary risk factors. To mitigate these incidents, the EU mandates that all new vehicles be equipped with driver monitoring systems by 2026. However, integrating these systems presents technical challenges, including compatibility, testing, night vision capabilities and scalability.

The Solution

In 2023, Stern Tech began working with STMicroelectronics on the Human First Vision concept car developed in collaboration with Renault and Software République. The initial proof of concept successfully integrated Stern Tech's advanced psychological behavioural analysis with ST's automotive high-tech imaging technologies. This innovative solution interprets the driver's emotional state by analyzing facial expressions, vocal patterns and key physiological markers such as language and pupil dilation captured microphones and an in-cabin camera.

The Outcome

The collaboration has evolved, resulting in a comprehensive multimodal interior sensing system that surpasses basic driver monitoring. This system detects signs of discomfort, distraction or unease, even under low visibility conditions. By interpreting facial expressions, voice patterns and physiological signals, the technology enables vehicles to react instantly during critical moments so that the car can be pulled over to safety, park autonomously or call for assistance. Designed for seamless integration into automotive Tier 1 and OEM systems, this plug-and-play solution is just a one-time innovation but a scalable platform that can integrate future innovations from STMicroelectronics, including biometric sensors.

Project Highlight

Stern Tech brings advanced multimodal psychological AI; ST provides robust, automotive high-tech sensors. Together, they built a solution that goes beyond basic driver monitoring: it's an intelligent co-pilot able to save lives, designed to evolve with the future of mobility.

Stern Tech

Stern Tech improves driver and passenger safety protection

Stern Tech technology analyzes driver alertness, fatigue and abnormal behaviour. It enables an in-vehicle system to react in just 300 milliseconds to detect discomfort, trigger warnings and take the right action to slow down the vehicle or autonomously park, all for a one-off cost of 3€ per car



Headquarters
Le Chesnay, France

Founded
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No. Employees
11 – 50

Website
stern.tech

Acknowledgement

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About STARTUP AUTOBAHN powered by Plug and Play

STARTUP AUTOBAHN powered by Plug and Play is an open innovation platform that provides an interface between innovative tech companies and industry-leading corporations.

The basis of the program is the partnership that develops between startups and the corporate business units. The two entities hold an equal footing from the get-go: together they evaluate the potential for a joint venture, move forward to pilot the technology, and work to achieve the ultimate goal – a successful production-ready implementation.

Designed with the intention to exceed startup acceleration, STARTUP AUTOBAHN powered by Plug and Play moderates a community for collaboration with a focus on implementable results.

Over the years, the platform has successfully cultivated over 500 projects with more than 350 startups since its founding in 2016. ■

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