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# Car that learns from its driver

A new computer system allows vehicles to learn from the behavior of their drivers at the wheel, where it can detect if a driver presents an "unusual behavior" in a curve or an obstacle on the road and generates signals of alarm, which warn him in time to react.

DRIVSCO is the program that goes beyond a computer vision system for driving assistance. The concept allows a car to learn from the user's driving facing a curve or an approaching intersection, a pedestrian, or another vehicle. Regardless the type of driving of the driver, sporty or conservative (as it adapts to his driving), the system obtains a driving behavior pattern.

Thus, during night driving, if the vehicle detects a deviation in his way of driving into a curve, it interprets it is due to the lack of visibility of the driver (as the driver has a limited visibility of the low beams field, whereas the car's night vision system is much more powerful and has a longer range). Therefore, it generates signals of alarm to warn the driver of his "unusual behavior when approaching a curve," or the detection of a potentially dangerous object, for instance.

Researchers said 42% of fatal traffic accidents happen at night, according to the data of the European Car Council.

Scientists from six European countries worked on this project.

**DRIVSCO system screen**

The research group developed an artificial vision system on a chip, said Eduardo Ros Vidal a professor in the Department of Computer Architecture and Technology of the University of Granada in Spain. The device receives input pictures and produces a first "interpretation of the scenario" in terms of depth (3D vision), local movement, image lines, etc., everything in an electronic chip. This system can work in different types of vehicles in future. In addition, they have "reconfigurable hardware," so the system can adapt itself to new field of application.

During field tests, a group drove using DRIVSCO so the car could learn from their driving style. The car had also a differential GPS incorporated (with several centimeters of precision), detection systems of wheel turns, braking, etc., so the research groups managed to check in great detail the style of driving in every case and the performance of the system. The first tests have offered promising results and have proved the usefulness of the new concept.

"We do not intend to develop automatic driving systems, as it would be very difficult for insurance agencies and car companies to come to an agreement in the event of a crash, but advanced driving assistance systems," Ros said. DRIVSCO's goal is to avoid car accidents and contribute to keep drivers alert, focusing their attention to the maximum.

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