Cars could soon monitor our EMOTIONS: Device reads facial expressions to prevent road rage

- Scientists at École Polytechnique Fédérale de Lausanne (EPFL), Switzerland, developed the system, which could boost road safety
- Prototype identifies a driver's emotions using an infrared camera placed behind the steering wheel to film their face
- Device is being developed with PSA Peugeot Citroën and researchers are also working on a fatigue detector measuring eyelid closure

By Sarah Griffiths


Car manufacturers are always looking for ways to make driving safer

And in the future, dashboard emotion detectors could search for signs of irritation in a bid to identify the first signs of road rage.

A prototype of the device is able to read a driver's facial expressions using a tiny embedded camera.

Scroll down for video
Scientists at École polytechnique fédérale de Lausanne (EPFL), Switzerland, developed the prototype device, which identifies a driver’s emotions - including anger (pictured) - using an infrared camera placed behind the steering wheel to film their face.

Scientists at École Polytechnique Fédérale de Lausanne (EPFL), Switzerland, have developed the system which identifies which of the seven universal emotions a person is feeling: fear, anger, joy, sadness, disgust, surprise, or suspicion.

They believe their technology could be of use in medicine, marketing, gaming and in driver safety.

‘We know that in addition to fatigue, the emotional state of the driver is a risk factor, the researchers said.

‘Irritation, in particular, can make drivers more aggressive and less attentive,’ they added.

The scientists worked with PSA Peugeot Citroën to create the prototype, which had to overcome the challenge of measuring emotions in the confines of a small space without distracting the driver.

No more road rage: New device detects anger on drivers faces
Researchers at EPFL’s Signal Processing 5 Laboratory came upon the idea of adapting a facial detection device for use in a car by using an infrared camera placed behind the steering wheel. Here, the device shows a high level of stress detected at 01:43.
Researchers at EPFL’s Signal Processing 5 Laboratory came upon the idea of adapting a facial detection device for use in a car by using an infrared camera placed behind the steering wheel.

‘The problem was to get the device to recognise irritation on the face of a driver,’ they said, because everyone expresses this emotional state differently.

Research leaders Hua Gao and Anil Yüce chose to track only two expressions: anger and disgust, whose manifestations are similar to those of anger.

The system first learned to identify the two emotions using a series of photos of subjects making corresponding facial expressions and then the same exercise was carried out using videos.

Using this system of learning, the device could accurately detect irritation in most cases and when it failed it was because of an individual’s way of displaying anger.

The scientists will aim to create a system that can work in real-time with a more advanced facial monitoring algorithm.
The team is also working on a fatigue detector that measures the percentage of eyelid closure, which could one day be used to develop a safety system to stop people falling asleep at the wheel.

They are also striving to detect distraction and on using lip reading and voice recognition, to give more of a clue to a driver’s mental state.

Volvo has launched a revolutionary safety device that scans for cyclists and automatically brakes if a collision is imminent.

AND VOLVO ADDS A SCANNER THAT APPLIES THE BRAKES WHEN IT DETECTS A BICYCLE SWERVING INTO A CAR

Volvo has launched a revolutionary safety device that scans for cyclists and automatically brakes if a collision is imminent.

The Swedish car firm says the camera and radar-guided technology, which is being introduced into cars from May, could save hundreds of lives.

The system comprises a radar scanner in the grille, a camera fitted in front of the rear-view mirror, and an onboard computer. It allows the car to identify cyclists who swerve into its path and reacts by slamming on the brakes.

The driver is given a loud audible warning and a visible warning of a row of red lights flashing up on the windsreen.

The new cyclist detector system comprises a radar scanner set into the car’s grille, a camera fitted in front of the rear-view mirror, and a computerised central control unit.

The radar measures the distance to any suspicious object while the camera
compares its shape and size against an electronic visual catalogue of thousands of images – including bicycles and cyclists. It can even differentiate between a pedal cyclist and a motor cyclist.

Radar: Computers calculate any possible collision and - if the driver ignores initial warnings - apply the brakes

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Joseph McLinden, San Diego-CA, United States, 6 hours ago

What about sensing PMS. During PMS some women hate everyone. It's call Rag Rage! I'd like a law where all women would have to get on a bus 5 days before their period, and go to a home for angry women, then after their period they get driven home, to rejoin their happy homes. Then their low-T husbands could "perform" better in the bedroom.

Bruce Seibert, Westminster, United States, 9 hours ago

Why are these idiots in the passing lane at the speed limit without passing the nonexistent traffic in the travel lane? Let's see... Four cars ahead of me, nothing on the right, 5 car-length gap to clear the front car... Go for it! Glance in right mirror, clear right... one down, two down... crap! the guy in front spotted me and wants to shut me down by closing the gap... Thank God for Hemi Power! Zoom he's slamming the door! Pedal on the floor, back to third Whaaaaaaaaaaaaaa... two car