IMOTIONS

Automotive Research

Advance automotive research by understanding drivers' experience through their own eyes. Quantify their alertness, drowsiness, and distraction with objective measures. Assess their comfort by measuring their muscle tension. Evaluate their emotions and arousal as they navigate rush-hour traffic, reduced visibility, or monotonous stretches of highway. Drive innovation that helps them arrive safely.

Enhance Road Safety through Driver Monitoring

Most traffic accidents are linked to driver inattention caused by distraction or drowsiness. As safety regulations in the automotive industry evolve to save lives, understanding driver states has become more critical than ever.

Our solutions for automotive research leverages **eye tracking** and **facial expression analysis** to monitor where drivers are looking, whether their eyes are open, and if they are engaged while behind the wheel. Additionally, measurements such as **respiration** and **galvanic skin response (GSR)** provide insights into physiological arousal levels, helping researchers detect fatigue, stress, or heightened alertness in real time.

Specifically interested in testing Driver Monitoring Systems to meet NCAP or other safety performance assessment programs? ***See our DMS Evaluation Tool***.

Optimize Human-Machine Interaction and Trust

Many drivers are initially skeptical of new automotive technologies, slowing adoption and affecting safety. Understanding how users perceive and interact with assisted or autonomous features helps designers build more intuitive experiences.

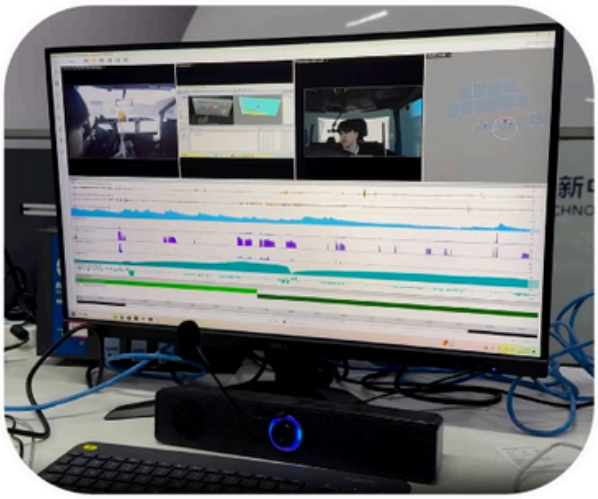
With automotive research tools, teams can track emotional responses via voice, facial expressions, and arousal signals like respiration, ECG, and GSR. These insights improve interface design, reduce cognitive load, and increase trust in automation for a smoother transition to autonomous driving.

Ergonomics and Comfort Monitoring

Driving is not solely about safety-it's also about comfort and experience. When drivers settle into their seats, they adjust the environment to their preferences-setting mirrors, seat position, temperature, and even entertainment. Our tools support a holistic approach to optimizing driver comfort, leading to better satisfaction and safer driving experiences.

With iMotions, you can evaluate whether vehicle ergonomics accommodate drivers of various heights by measuring muscle strain via EMG. Additionally, EEG monitoring can reveal changes in cognitive load influenced by environmental factors, helping designers create more comfortable, user-friendly cabins. Eye tracking data can help optimize UX/UI for in-cabin dashboards.

Versatile Testing with Simulators and Test Tracks



Our software platform is flexible enough to be used in both high-fidelity simulators and real-world test tracks. It can synchronize data streams from various hardware devices, allowing simultaneous measurement of cognitive load, attention, emotion, and arousal. This holistic approach provides an in-depth understanding of driver behavior under different conditions.

Whether you're assessing reactions in a controlled environment or in real driving scenarios, our experienced researchers can assist in choosing hardware and setting up your studies, ensuring you gather comprehensive data to improve vehicle safety, comfort, and user experience.

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