Complete hardware and software solution for driver drowsiness and inattention detection
1.25 Million people die in road crashes every year

94% of these are due to human error

**According to a study by WHO**
**PathPartner Driver Monitoring Solution**

PathPartner’s driver monitoring solution, a licensable hardware plus software solution, provides reliable detection of driver drowsiness and in-attention and several auxiliary features, using a single low-power camera inside the vehicle. It uses advanced computer vision algorithms to measure and analyze head-pose, eye-gaze, eye movement and other facial features under various operating conditions. It is suitable to be integrated into a wide range of Advanced Driver Assistance Systems (ADAS) and Autonomous Driving (AD) applications.

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**Driver Identification**
- Single image registration
- Age group identification
- Gender classification

**Drowsiness Detection / Prediction**
- Blink assisted fatigue prediction
- Yawn & blink count regressor
- Close eye detector
- Head nodding detector

**Driver Distraction Alert**
- Looking away alert
- Gaze assisted exceptions

**Driver Action Classification**
- Action specific event trigger
- Identifying talking, laughing, drinking & texting

**Driver Emotion Estimation**
- Emotion classifier: Anger, fear, sad, surprise, disgust & happy

**In-cabin Occupancy**
- People count
- Child presence detection
Why PathPartner Driver Monitoring Solution?

**RELIABLE**
- Works under diverse operating conditions - illumination, dark glasses, camera position
- Works with RGB, IR & RGB+IR data
- High frame rate of operation for high accuracy

**AFFORDABLE**
- No costly components. Utilizes standard, readily available automotive grade platforms and camera
- Low cost BoM possible due to SIMD friendly algorithms and ultra optimizations

**EASE OF INTEGRATION**
- Reference hardware solution available
- Easy to customize and integrate with well defined APIs

**NCAP SAFETY ENABLEMENT**
Enables key safety recommendations of NCAP program including:
- Seat belt reminder
- Driver position monitoring
- Automatic emergency steering
- Child presence detection
- Driver state monitoring
Engineered for Embedded

PathPartner DMS is platform agnostic and works on hybrid architectures including ARM, DSP, GPU, FPGA & Vision accelerators.

Currently Available Platforms

- Qualcomm - SD820, QCS 605, SA8155
- MediaTek - MT2712E
- Intel - E3800, E3900
- Quectel - SC600
- NXP - IMX8X
- Renesas - Rcar H3
- Broadcom - BCM89107

Tested with following Camera Sensors

- ST - VG5761
- OV - 2311
- OV - 10635
- AR - 0144, 0234

and other RGB Cameras

Reference Hardware Design Available on i.MX8X for Mass Deployment

Also available as Android APK