

Using an Open Source Gaze Tracker for Driver Eye Movement Tracking.

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Driver distraction continues to be a cause for concern, and laboratory experiments using simulators do not present the same level or perceived risk for drivers as on-road driving. In an effort to obtain data from realistic settings, the Driver and Vehicle Tracking Lab routinely conducts test drives with volunteer drivers and captures driver eye movements along with data such as braking and lane tracking performance, vehicle speed, video of the driver and the road scene using cameras mounted on the drivers head etc.

The goal of this project is to interface an open source gaze tracking software package (ITU gaze tracker:

www.gazegroup.org/downloads/23-gazetracker) with an existing set of sensors and a mini ITX motherboard (2.5 Ghz, dual core, at least 2 PCI slots) so that the head and eye movements of drivers can be captured from on-road driving tests. The project will involve the following tasks:

- Reconfiguration of the DRIVE system developed last year to use more powerful CPUS.
- Development of a head mounted eye tracking system based on the ITU gaze tracking software.
- Development of a head tracker that can be used in an automobile.
- Reconfiguration of the existing software or development of software to log data from the different devices including additional HD video captured from the driver's head mounted/wearable camera.

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