Active Testing Setups for Collision Avoidance

Relevance to the Automotive Industry:	The testing of Active Safety Systems is very important to analyze behavior of drivers and systems for research and development of the system and for approval. Therefore relevant testing setups are needed, and the influence of the environment on the setups needs to be quantified.
Research Location:	TUD Fahrzeugtechnik (FZD)
Homepage (Engl.):	http://www.tu-darmstadt.de/fzd/index_en.html
Faculty Mentor:	Prof. Dr. rer. nat. Hermann Winner
Faculty Mentor Email:	winner@fzd.tu-darmstadt.de
Graduate Mentor:	Dipl.-Ing. Alexander Weitzel
Graduate Mentor Email:	weitzel@fzd.tu-darmstadt.de
Project Description: May 21 - Jul 13, 2012; (8 weeks, 40h/week)	This project is part of a larger study about the testing requirements of active safety systems like Collision Avoidance Systems at FZD. The task of this specific NSF REU project is to analyze the environmental influence factors on test setups for collision avoidance systems. Based on the literature and the data from preceding studies, the NSF REU student will analyze visual distractions of drivers to determine their causes and average length. The objective is of the student to identify the impact and evaluate effect of these distractions on the test setup. The NSF REU student should be experienced with data processing and analysis. Additional experience with Active Safety and Advanced Driver Assistance Systems of vehicles will be useful.
Target publications:	• **IEEE Transactions on Vehicular Technology**
Necessary Skills/ Knowledge:	• MATLAB/ Simulink
Desirable Skills/ Knowledge:	• Active Safety and Advanced Driver Assistance Systems
Additional Online Resource(s):	

NSF REU Students must have completed at least two semesters of engineering studies prior to the proposed summer research, and they must have at least one semester remaining before they can earn their BS in Engineering.