

Uwe Franke, Daimler Research & Development Computer Vision for Autonomous Cars

Recent Mercedes Benz cars offer a powerful STEREO camera system that sets new standards in vehicle safety and comfort. Modern dense disparity estimation combined with top-performing pedestrian classification allow for fully autonomous emergency braking. The system works for a speed range up to 72km/h – both day and night. Even more, for the first time Mercedes' Intelligent Drive offers autonomous driving at low speeds in traffic jams.

Currently, the research is heading towards autonomous driving on highways as well as in cities. In August 2013, a Mercedes Benz S-class named "Bertha" drove autonomously from Mannheim to Pforzheim, following the 100km long historic route of Bertha Benz.

The talk will sketch the state-of-the-art in robust Computer Vision for driver assistance and will present the vision system used for autonomous driving through busy cities. In addition, recent developments in Image Understanding that hopefully pave the way towards accident-free driving will be presented.

Uwe Franke received his Diploma degree and his PhD degree both in electrical communications engineering from Aachen Technical University in 1983 and 1988. Since 1989 he is with Daimler Research&Development. He developed Daimler's lane departure warning system and has been working on stereo vision since 1996. Since 2000 he is head of Daimler's Image Understanding group. The algorithms developed by this group are the basis for Daimler's Stereo Camera based safety systems that have become commercially available in Mercedes vehicles last year.

Uwe Franke was program chair of the IEEE Intelligent Vehicles Symposium IV 2002 in Versailles (France) and for many years a member of the technical committee of the German Association for Pattern Recognition. He was nominated for the German Future Prize in 2011 and was awarded the Karl Heinz Beckurts-Prize in 2012.

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