

# 学术报告会

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地点：电院群楼2-406会议室

## Vision-Based Driver Assistance as A Step Towards Autonomous Driving

Reinhard Klette

Auckland University of Technology, New Zealand



### Abstract:

In recent years, the field of vision-based driver assistance experiences very rapid developments due to the demands in the car industry, with autonomous driving as the ultimate goal. The talk will discuss computer vision challenges in the context of vision-based driver assistant systems, certainly one of the most difficult areas of current 3D image analysis. The author is actively involved in research for vision-based driver assistant systems since 2006, with collaboration partners in Germany and China. A question to be answered by multi-sensor systems is, for example: What may happen next in front of the car, at the location where the ego-vehicle is expected to be in the next few seconds? The talk will report on stereo and motion analysis of real-world sequences, with special emphasis on performance evaluation, and also on pedestrian or vehicle detection and tracking. The talk will also discuss potentials of monocular vision. How far can we understand a complex environment, as defined by traffic scenarios, by just using a single camera? A new quality of tasks is now defined by creating combined solutions for the better understanding of traffic related events, such as combining lane analysis or distance calculations with driver monitoring. Is the driver paying attention to a potential risk?

### Biography:

**Dr. Reinhard Klette** is a professor at Auckland University of Technology (AUT) in New Zealand. He has been elected as a fellow of the Royal Society of New Zealand (RSNZ). He has several degrees from Jena University in Mathematics and Computer Sciences, including an M.Sc., a Ph.D. and a D.Sc. degree. His previous appointments include positions as a full professor at Auckland University, the Technical University of Berlin, and the Academy of Sciences Berlin. His research interests include computer vision, pattern recognition, and algorithm design. He represents New Zealand in the International Association for Pattern Recognition (IAPR) and in the Asian Federation for Computer Vision (AFCV). He is also a member of the Institute of Mathematics and its Applications in the United States and a member of the Korea Institute of Information and Communication Engineering in South Korea. From 2003 to 2008, he was an associate editor of IEEE Transactions on Pattern Analysis and Machine Intelligence; from 2011 to 2013 he was the founding editor-in-chief of the Journal of Control Engineering and Technology; from 2005 to 2014, he was a member of the editorial board for the International Journal on Computer Vision. Currently, he is an editor of "Computational Imaging and Vision" published by Springer and a member on the editorial boards of several scientific journals. He is a member of the steering committees of the European biennial conferences on Computer Analysis of Image and Patterns and the Pacific-Rim Symposia on Image and Video Technology.