

Dickmanns ED 1986: **Computer Vision in Road Vehicles – Chances and Problems**

Abstract: A brief review of the development of vehicle and road systems is given discussing the functions of vision in this context. It is analyzed what services may be provided by computer vision systems of the future. These functions are grouped into three areas: 1. "Internalization" of actual traffic regulation and navigation status, 2. monitoring functions and 3. partly or fully autonomous control. For each group several exemplary proposals are discussed, leaving the technical problems of image sequence processing aside and focusing on man-machine interface problems. The flexibility of the future knowledge based monitoring and automatic control system using active vision will require special emphasis on cognitive ergonomics-engineering to achieve acceptance and to make the full potential of the system accessible to the driver for selecting the parameters according to his preferred style of driving.