DESCRIPTION

Acts as single source reference providing readers with an overview of how computer vision can contribute to the different applications in the field of road transportation

This book presents a survey of computer vision techniques related to three key broad problems in the roadway transportation domain: safety, efficiency, and law enforcement. The individual chapters present significant applications within those problem domains, each presented in a tutorial manner, describing the motivation for and benefits of the application, and a description of the state of the art.

Key features:

• Surveys the applications of computer vision techniques to road transportation system for the purposes of improving safety and efficiency and to assist law enforcement.

• Offers a timely discussion as computer vision is reaching a point of being useful in the field of transportation systems.

• Available as an enhanced eBook with video demonstrations to further explain the concepts discussed in the book, as well as links to publically available software and data sets for testing and algorithm development.

The book will benefit the many researchers, engineers and practitioners of computer vision, digital imaging, automotive and civil engineering working in intelligent transportation systems. Given the breadth of topics covered, the text will present the reader with new and yet unconceived possibilities for application within their communities.
ABOUT THE AUTHOR

Robert P. Loce, Conduent Labs, USA
Dr. Robert P. Loce is a Fellow of SPIE and a Senior Member of IEEE. His publications include a book on enhancement and restoration of digital documents, and 8 book chapters on digital halftoning and digital document processing, 28 refereed journal publications, and 53 conference proceedings. He is currently an associate editor for Journal of Electronic Imaging, where he recently guest-edited a special topic issue on the subject matter of the proposed book. He also chairs a conference within the SPIE/IS&T Electronic Imaging symposium on the subject matter of the proposed book. He has also been an associate editor for Real-Time Imaging, and IEEE Transactions on Image Processing.

Raja Bala, Samsung Research America, USA
Dr. Bala has authored over 100 publications, including several book chapters, and holds over 120 U.S. patents in the field of digital and color imaging. He has served as adjunct faculty member at the Rochester Institute of Technology, and has taught many short courses and guest lectures on a variety of topics in digital imaging. From 2008-12, he served as Vice President of Publications for the Society for Imaging Science and Technology, where he led the Editorial Board for the IS&T/Wiley Book Series. He has served as Associate Editor of the Journal of Imaging Science and Technology, and is a frequent reviewer for IEEE Transactions on Image Processing, Journal of Electronic Imaging, and Journal of Imaging Science and Technology. Dr. Bala is a Fellow of IS&T and Senior Member of IEEE.

Mohan Trivedi, Jacobs School of Engineering, University of California, San Diego, USA
Prof. Mohan Trivedi is the Head of UCSD's Computer Vision and Robotics Research laboratory, overseeing projects such as a robotic, sensor-based traffic-incident monitoring and response system (sponsored by Caltrans). Prof. Trivedi is leading an interdisciplinary effort, as UCSD layer leader for intelligent transportation and telematics for the California Institute for Telecommunications and Information Technology [Cal-(IT)2]. Prof. Trivedi is a recipient of the Pioneer Award and the Meritorious Service Award from the IEEE Computer Society; and the Distinguished Alumnus Award from Utah State University. He is a Fellow of the International Society for Optical Engineering (SPIE). He is a founding member of the Executive Committee of the UC System-wide Digital Media Innovation Program (DiMI). He is also Editor-in-Chief of Machine Vision & Applications (Springer).