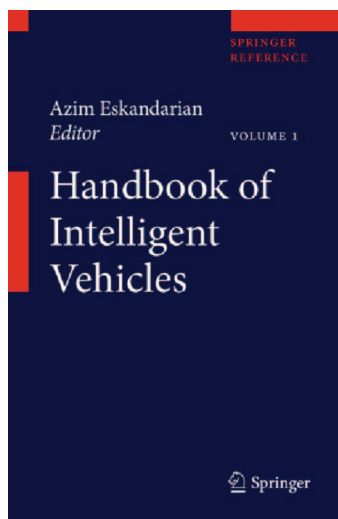


Review of the Book *Handbook of Intelligent Vehicles*

The *Handbook of Intelligent Vehicles* is edited by Prof. Azim Eskandarian and it is published in the middle of this year (2012). It constitutes a practical and theoretical handbook that provides a broader (and fresh) picture of a large topic such as “intelligent automobiles.” Azim Eskandarian is Professor of Engineering and Applied Science and Director of the Center for Intelligent Systems Research (CISR) which conducts research in a variety of vehicle/highway safety, vehicle control, driver assistance, and traffic safety and control problems. The center is distinguished for significant contributions in Intelligent Vehicles and Transportation Systems.

Intelligent Vehicles (IVs) includes a wide range of technologies that span from vehicle dynamics to information, communications, hardware, computer vision, artificial intelligence, ergonomics and human factors as well. Due to this diversity of technologies, the scientific references in IVs were fragmented in numerous resources (books, journals and conference proceedings), while there was not a single title to provide the necessary coverage of the topic. This handbook aims to fill this space, capturing almost all the



Title: *Handbook of Intelligent Vehicles (2 Volumes)*

Authors: Azim Eskandarian (Editor)

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developments, technologies, open issues, current and future trends in a comprehensive format, addressing all essential topics and subtopics of intelligent vehicles.

The handbook is organized in two separated volumes and the topics are divided in 11 sections, as shown below:

- Section 1 “Overview of Intelligent Vehicle Systems and approaches”: includes information about intelligent functions, sensing and actuation, situational awareness, automatic controls and simulation in intelligent vehicles.
- Sections 2 “Vehicle Longitudinal and Lateral Control Systems”: covers issues like longitudinal, adaptive and cooperative cruise controls and lateral control in vehicles.
- Section 3 “Special Vehicular Systems”: deals with modern topics such as drive-by-wire and powertrain systems in intelligent automobiles.
- Section 4 “Positioning, Navigation and Trajectory Control”: This large section presents the latest trends in Global Navigation Satellite Systems, enhanced map matching, vehicle navigation, in-car navigation systems and road prediction for trajectory control applications.
- Section 5 “Driver Assistance”: presents fundamental issues of assistance systems, driver behavior modeling, test and evaluation techniques and intelligent speed adaptation.
- Section 6 “Safety and Comfort Systems”: covers critical topics such as collision warning and avoidance systems, lane departure/keeping systems, lane assistant

Reviewer: Christos-Nikolaos Anagnostopoulos



Christos-Nikolaos E. Anagnostopoulos was born in Athens, Greece in 1975. He received his Mechanical Engineering Diploma from the National Technical University of Athens (NTUA) in 1998, and the Ph.D. degree from the Electrical and Computer Engineering Dpt., NTUA in 2002.

From 2008, he serves the University of the Aegean as Assistant Professor in the Cultural Technology and Communication Department. He is a member of the Greek chamber of Engineers and member of IEEE. His research interests include image processing, computer vision, neural networks and intelligence transportation systems applications. He has published more than 110 papers in journals and conferences, in the above subjects as well as other related fields in informatics. He also serves as associate editor for the *IEEE Intelligent Transportation Systems Magazine*.

systems and adaptive cruise controls, map data for ADAS, parking assistance and pedestrian protection.

- Section 7 “Drowsy and Fatigued Driver Detection, Monitoring, Warning”: describes all the latest achievements in detecting drowsy drivers, driver facial monitoring and all counter measures for these issues.
- Section 8 “Video-Based Systems”: reports image processing methods for vehicle applications, latest camera technologies, obstacle and lane detection in terms of computer vision and perception, traffic sign recognition and computer vision methods for blind-spot monitoring as an assistive module.
- Section 9 “Vehicular Communication Systems”: provides information about the “hot topics” of Vehicle-to-Vehicle (V2V) and Vehicle-to-Infrastructure (V2I) communications, cooperative driving for fleet management and security/privacy issues as well.
- Section 10 “Fully Autonomous Driving”: highlights the current and future trends in this fascinating topic, such as motion planning, safety issues, risk-based decisions, road scene awareness, probabilistic vehicle motion modeling and its behavior.
- Section 11 “A look to the Future of Intelligent Vehicles”: describes future applications, the legal issues

arising from the new technologies and their impact on the markets.

Hence, it is evident that *Handbook of Intelligent Vehicles* is an extremely valuable material for scientists, engineers and practitioners engaged to the new emerging field of Intelligent and Autonomous Vehicles and all the supporting technologies/disciplines. Apart from the technologies implemented in IVs (informatics, software, hardware, computer vision, telecommunications, artificial intelligence), this handbook does not forget to emphasize the human factors involved in the development intelligent vehicles.

More than 110 experts have contributed to these two volumes edited by Prof. Azim Eskandarian. Their expertise, their fresh look and novel ideas are reflected in every section. The result is an extremely ambitious title that could easily be the best seller in the field of Intelligent Vehicles for many years to come. Personally, I enjoyed reading the sections related to my scientific interests (sections 6, 8 and 10) and I am totally convinced that all other sections are intuitive, inspiring and comprehensive in the same degree.

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EDITOR'S COLUMN *(continued from page 2)*

Although I have spent most of this column talking about my own experiences, I hope many of you can relate in a similar manner. If you ever have questions or just want to discuss some topics, feel free to send me an e-mail or catch me at a conference. As many of my colleagues who have now turned into close friends can tell you, I am always up

for a vigorous conversation about any topic.

This issue provides three exciting papers about automated vehicles. We are also starting a new column, led by Javier Sanchez Medina from the Universidad de Las Palmas de Gran Canaria, called “ITS Fun” with some interesting facts, thought-provoking games, and transportation history.

And don't forget to send your papers to the *ITS Magazine*!

Read, research, and write...

A handwritten signature in black ink, appearing to read "Jeff Miller".

Jeffrey Miller
Editor-in-Chief

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