Key Technologies Behind Autonomous Vehicles

Speaker:

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Description:

Future transportations in land, sea and air will depend on the massive deployment of autonomous vehicles. In this way, the traffic safety could be guaranteed by advanced technologies. In addition, the autonomies in mobility will largely help us reduce the dependence on the employment of skilled human drivers so as to tackle the problem caused by the shortage of well-trained manpower in the sections of transportations. In this keynote speech, I will present the key technologies behind the achievements of autonomies by all kinds of vehicles in land, sea and air. The autonomies of these vehicles include: landmark following, moving target following, automatic parking/docking, collision avoidance, automatic landing, automatic manoeuvre, and target identification, etc.

Biodata of Speaker:

Xie Ming received the B.Eng degree in control and automation engineering. Subsequently, as a recipient of the overseas scholarship from Chinese government, he has completed the study for Master degree in the University of Valenciennes (France) as well as the research for PhD degree in the University of Rennes (France). He is Associate Professor of Nanyang Technological University, and was a Fellow with Singapore-MIT Alliance (SMA). He was the General Chair of 2007 International Conference on Climbing and Walking Robots (CLAWAR), the General Chair of 2009 International Conference on Intelligent Robotics and Applications (ICIRA), the Co-founder of the International Journal of Humanoid Robotics (SCI/SCIE indexed), Co-founder of Singapore-China Association for Advancement of Science and Technology, Co-founder of Robotics Society of Singapore. He has taught the courses such as Robotics, Artificial Intelligence, Applied Machine Vision, Measurement and Sensing Systems, Microprocessor Systems, and University Physics. In terms of scientific research, he has published two books, two edited books, several book chapters, over 10 patents of invention, over 30 research papers in scientific journals and over 100 research papers in international conferences. He was the recipient of one best conference paper award from World Automation Congress, the recipient of one best conference paper award from CLAWAR, the recipient of one outstanding paper award from International Journal of Industrial Robot, the recipient of one Gold Prize (S$8K) from CrayQuest, the recipient of one Grand Champion Prize (S$15K) from CrayQuest, the recipient of one A-Star's Best Research Idea Prize (S$5K), the recipient of one Silver Medal from Dragon Design Foundation.