

## Toward Self-Intelligent Land Vehicles

### Speaker:

Prof. Xie Ming

Nanyang Technological University

mmxie@ntu.edu.sg

### Description:

The invention and evolution of land vehicles has a long history of over 100 years. And, today's transportation still heavily depends on the use of land vehicles. However, the increase in number of land vehicles do cause three major problems, namely: traffic jam, air pollution, and fatal accidents. Therefore, it is the world-wide effort which aims at achieving zero pollution and zero accident. And, undoubtedly, the best solution toward such goal is the massive deployment of intelligent electric vehicles with self-driving capabilities. In this seminar, I will talk about the current achievements of vehicle intelligence, the future trend of developing self-intelligence for land vehicles, and the three challenges faced by equipping land vehicles with self-intelligence. These three challenges are: How to represent knowledge which are understood by land vehicles? How to acquire knowledge by land vehicles themselves? And, how do land vehicles make use of learnt knowledge in order to support decisions and actions?

### 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.