

学术报告会

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Bio-inspired Intelligent Approaches to Real-time Navigation and Cooperation of Various Robotic Systems

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摘要:

Research on biologically inspired intelligence has made significant progress in both understanding the biological systems and developing bionic engineering applications to sensing, information processing, and control for various robotic systems. In this talk, I will start with a very brief introduction to some biologically inspired intelligent approaches, such as neurodynamics models and biological sensor-motor models. Then, several applications of intelligent systems to biological systems and bio-inspired systems will be briefly mentioned. After that, I will focus on our current research on bio-inspired intelligent approaches with applications to various robotic systems, such as real-time motion planning, tracking, and control of autonomous mobile, aerial, water surface and underwater robotic systems; intelligent tomato-harvesting robotic systems; and intelligent cooperation and coordination of multi-robot systems.

简介:

Prof. Yang received the B.Sc. degree in engineering physics from Beijing University, China, in 1987, the first of his two M.Sc. degrees in biophysics from Chinese Academy of Sciences, Beijing, China, in 1990, the second M.Sc. degree in electrical engineering from the University of Houston, USA, in 1996, and the Ph.D. degree in electrical and computer engineering from the University of Alberta, Edmonton, Canada, in 1999. Currently he is a Professor and the Head of the Advanced Robotics and Intelligent Systems (ARIS) Laboratory at the University of Guelph. Prof. Yang's research interests include robotics, artificial intelligence, sensors and signal processing, multi-sensor fusion, wireless sensor networks, intelligent control, and computational neuroscience. Prof. Yang has published over 600 papers, including over 330 journal papers (over 70 in IEEE Transactions). Prof. Yang he has been very active in professional activities. He currently serves as the Editor-in-Chief of Intelligence & Robotics, and International Journal of Robotics & Automation, and an Associate Editor of IEEE Transactions on Cybernetics, IEEE Transactions on Artificial Intelligence, and several other international journals. He has involved in the organization of many international conferences.