上海交通大学自动化系
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Key Laboratory of System Control and Information Processing, Ministry of Education

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Robotics Technology in Medical Engineering

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Abstract:

We During the last 30 years, the technology emerged from engineering research areas, i.e., CT, Ultrasound, and MRI, has brought great changes to medical diagnosis. Recently, the development of therapeutics, such as non-invasive laparoscopic surgery, attracted more research interests from engineering field. Apparently, engineering is strongly contributing to the innovation of both diagnosis and therapeutics. Robotics technology, featured by integrated sensing, actuating, control and decision making system, will definitely play an essential role in Medical Engineering. What makes the robotics in medical engineering different is the human-orientedness, which is demanded by most research areas of medical engineering. This requires the understanding or interpretation of human functions, and their artificial realization based on mechanical structures, and information processing that could comply with human users. In this talk, our research efforts on the prostheses, surgery support robots, bio-monitoring mobile robots for at home therapy and rehabilitation, some on-going projects in the research areas, as well as several open problems will be addressed.

Biography:

Wenwei Yu received his BEng and MEng from Shanghai Jiao Tong University in 1989 and 1992, respectively. His PhD was received in system information engineering, Hokkaido University, Japan in 1997. He served as an assistant professor in system information engineering department, school of engineering, Hokkaido University from 1999 to 2003. He received his MD from rehabilitation medical science, Hokkaido University, Japan in 2003. He was an exchange research fellow in Center for Neuroscience, University of Alberta, Canada, in 2003, supported by the Researcher Exchange Program, Japanese Society for Promotion of Science (JSPS). He has been an associate professor in department of medical system engineering, school of engineering, Chiba University, Japan, since April, 2004 and Professor from Sept. 2009. From July-October 2006, he was in the AI Lab, Zurich University, Switzerland, as a visiting professor, supported by Japanese Society for Promotion of Science (JSPS). Prof. Yu has authored and co-authored more than 90 papers in refereed journals, book chapters, and more than 100 international conference papers. He is on the Editorial Board of 2 international journals. He is a member of IEEE and RSJ(Robot Society of Japan), JSMBE(Japanese Society for Medical and Biological Engineering).