

Prof. Dr.

## Hirochika Inoue

Inspector General, JSPS  
Professor Emeritus, The University of Tokyo

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Born July 5, 1942

### Summary of CV

Hirochika Inoue received the B.E., M.E., and Dr. of Engineering, in 1965, 1967, 1970 respectively, all from the University of Tokyo, in Mechanical Engineering.

He was involved in the robotics division at the Electrotechnical Laboratory, MITI Japan from 1970 to 1978, where he carried out various research in the intelligent robotics project. In 1978 he moved to the University of Tokyo, Department of Mechanical Engineering as an Associate Professor. In 1984 he became a Professor, and he contributed to reform traditional Mechanical Engineering into world novel Department of Mechano-Informatics. Since 1965 he has engaged in robotics research, and explored various important fields of robotics such as bilateral control of robot arm, visual guidance of robot motion, development of high speed robot vision, view and visibility of environment, learning by seeing of robot behavior, real-time tracking vision system, humanoid robots, platform for robotics research, and so on. For those accomplishments he received plenty of awards from various academic societies of wide areas.

During the 40 years of robotics research and development, from 1965 as graduate students to university retirement as professor in 2004, he opened wide key areas of robotics such as compliant control of robot actuation, real-time vision system for robots, planning and programming of robots, system integration, hand-eye systems, vision guided vehicle, and humanoids. As Professor Emeritus of University of Tokyo, his experience and insight of robotics research is turned to research funding as well as support of robotized future society. From April 2004, he was appointed as the Inspector General, Japan Society for the Promotion of Science (JSPS). With the leading scholars, he edited and wrote New Textbook of Robotics in 7 volumes. This series of New Robotics are published from Iwanami Ltd. as follows, (1) Establishment of New Robotics, (2) Robot Motion, (3) Robot Vision, (4) Robot Intelligence, (5) Robot Informatics, (6) Robot Frontiers, and (7) Robot Anatomy.

### Research interests

all technical aspects of robotics, system integration, innovation and business model, social acceptance

### Honours

- Best Paper Award, Japan Society of Mechanical Engineers (Computer controlled bilateral manipulator, crank rotation and pin-into-hole), 1971.4
- Best paper Award, Pattern Recognition Society, USA (Visual feedback of robot), 1975.7
- Best Paper Award, Robotics Society of Japan (Rope handling by Hand-Eye), 1987.4
- Technology Development Award, Society of Instrumentation and Control Engineering (Development of LSI for multi-window robot vision) , 1988.8
- Best Paper Award, Japan Society of Artificial Intelligence, (View and visibility), 1989.6
- IJCAI Outstanding Paper Award (learning by seeing of robot), 1993.8
- JIRA Award, Japan Industrial Robot Association (Tracking vision system), 1994.5
- Outstanding Contribution Award, Japan Society of Mechanical Engineers, Robotics and Mechatronics Division, 1996.6
- Technical Contribution Award, Japan Society of Mechanical Engineers, 1997.7
- Technology Development Award, Robotics Society of Japan (Robot vision), 1997.9

- Best Paper Award, Robotics Society of Japan (Software platform for robotics), 1998.9
- Best paper Award, Robotics Society of Japan (Tactile sensor suits), 1999.9
- The Joseph Engelberger Robotics Award, 1999.10
- Fellow, Japan Society of Mechanical Engineers, 2000.4
- Best paper Award, IEEE/RAS Int. Conference on Humanoid Robotics, 2000.9
- Award for Technical Contribution, Tokyo Metropolitan Government, 2002.10
- Fellow, Robotics Society of Japan, 2003.9
- Best Paper Award, Robotics Society of Japan (Robot with spine structure), 2004.9
- Pioneer Award, IEEE, Robotics and Automation Society, 2005.5

### **Activities (Selected)**

- Senior Research Advisor, Digital Human Research Center, AIST, 2004-
- Strategic Advisory Committee, EURON, Beyond Robotics Project, EU, 2004-
- Project Leader, R&D Project on Advanced Robots for EXPO2005, Aichi, 2004-2005
- Project Leader: Humanoid Robotics Project, Ministry of Economy, Trade and Industry, 1998-2002
- Project Leader: Micro-Mechatronics and Soft-Mechanics, JSPS Research for the Future Program, 1996-2000
- Principal Investigator: Inter-University Research on "Intelligent Robotics", Ministry of Education, 1995-1997
- President: International Foundation of Robotics research, 1995-2000
- Secretary: International Foundation of Robotics Research, 1987-1995
- Editorial Board Member: Autonomous Systems, 1993-
- Editorial Board Member: International Journal of Robotic Systems, 1985-
- Editorial Board Member: International Journal of Robotics Research, 1983-
- President, Vice President: Division of Robotics and Mechatronics, JSME, 1991.4-1993.3
- Editor-in-Chief: International Journal of Robotics Society of Japan, 1988.4-1990.3



## **Robotics Research: Past, Present and Future**

### **Abstract :**

Starting his talk by his doctoral work on computer controlled bilateral manipulator of 1969, he introduces lots of historical accomplishments of robotics including recent humanoid robots as well as EXPO robots. Now in Japan, our government and society are strongly expecting robots as a novel seed for innovation. He will provide materials to discuss about a role of robots for future aging society and new industrial possibility of the 21st century.