

IEEE VGTC Virtual Reality Career Award 2007

The 2007 Virtual Reality Career Award goes to Susumu Tachi of the University of Tokyo, Japan in recognition of his seminal contributions to telexistence, virtual reality, haptics, and augmented reality. Professor Tachi is the founding President of the Virtual Reality Society of Japan, a former Chair of the IEEE Virtual Reality Conference, serves on the Steering Committee of IEEE VR, and has contributed extensively to the Virtual Reality research literature. He received the B.E., M.S., and Ph.D. degrees in mathematical engineering and information physics from the University of Tokyo in 1968, 1970, and 1973, respectively. The IEEE VGTC is pleased to award Susumu Tachi the 2007 Virtual Reality Career Award.



Susumu Tachi

University of Tokyo

IEEE VGTC Virtual Reality Career
Award Recipient 2007

BIOGRAPHY

Susumu Tachi was born in Tokyo, Japan, on January 1, 1946. He received his B.E., M.S., and Ph.D. degrees in mathematical engineering and information physics from the University of Tokyo in 1968, 1970, and 1973, respectively. He joined the Faculty of Engineering of the University of Tokyo in 1973, and in 1975, he moved to the Mechanical Engineering Laboratory of the Ministry of International Trade and Industry, where he served as the director of the Biorobotics Division. In 1989, he rejoined the University of Tokyo, and is currently a Professor at the Department of Information Physics and Computing.

From 1979 to 1980, Dr. Tachi was a Japanese Government Award Senior Visiting Scientist at the Massachusetts Institute of Technology, Cambridge, USA.

One of his scientific achievements is the invention and development of an intelligent mobile robot system for the blind called Guide Dog Robot (1976–1983), which is the first of its kind. This system is known as MELDOG.

In 1980, Dr. Tachi proposed the concept of telexistence, which is fundamentally a technology enabling a human being to experience a real-time sensation of being at a place distant from his or her actual position; further, he or she can also interact with such a remote environment, which may be real, virtual, or a combination of both. Telexistence became the fundamental guiding principle of the eight-year Japanese National Large Scale Project, “Advanced Robot Technology in Hazardous Environments (1983–1990).” Through this project, he made theoretical considerations, established systematic design procedures, developed experimental hardware telexistence systems such as TELESAR, and demonstrated the feasibility of the concept.

Prof. Tachi led several large projects, which include National Study on a Priority Scientific Area of Virtual Reality (Fundamental Study on Virtual Reality: Generation of Virtual Space and Human Interfaces for Virtual Environments) (1995–1999) as the project leader, National Large Scale Project on Humanoids and Human Friendly Robotics (HRP) (1998–2003) as the project sub-leader, and CREST Project on Telexistence Communication Systems (2000–2005) as the project leader.

His present research encompasses robotics, augmented reality, virtual reality, and haptics with special focus on

Mutual Telexistence using retro-reflective projection technology (RPT). One of the applications of RPT is optical camouflage, which was chosen as one of the coolest inventions of 2003 by TIME Magazine.

He has also developed telexistence wide-angle immersive stereoscope (TWISTER), which has a full-color autostereoscopic display with a 360-degree field of view. TWISTER displays 3D images on LED panels rotating at a high speed, while simultaneously capturing a 3D image of the observer by employing cameras installed on the rotating panels. This technology will enable us to have a “meeting” in a virtual space with people who are physically in different places.

Prof. Tachi is a founding director and a fellow of the Robotics Society of Japan (RSJ), a fellow of the Society of Instrument and Control Engineers (SICE), a fellow of the Japan Society of Mechanical Engineers (JSME), and is the founding President of the Virtual Reality Society of Japan (VRSJ). From 1988, he has served as Chairman of the IMEKO (International Measurement Confederation) Technical Committee 17 on Measurement in Robotics, and organized several ISMCR (International Symposium on Measurement and Control in Robotics) conferences.

He initiated and founded ICAT (International Conference on Artificial Reality and Telexistence) in 1991 and IVRC (International-collegiate Virtual Reality Contest) in 1993. He is a member of IEEE VR Steering Committee and served as General Chair of IEEE VR 2001 and 2002.

AWARD INFORMATION

The IEEE VGTC Virtual Reality Career Award was established in 2005. It is given every year to an individual to honor that person’s lifetime contribution to virtual & augmented reality. VGTC members may nominate individuals for the Virtual Reality Career Award by contacting the 2007 awards chair for virtual reality, Larry F. Hodges, at vgtc-vr-awards@computer.org.