

Citation

The proposal of the basic technology for an analog to digital converter recently being most widely utilized and the pioneering research in a variety of signal processing for image coding, and the outstanding contributions to the development and dissemination of information and telecommunications engineering



Dr. Yasuhiko Yasuda

Positions and Organizations :

Professor Emeritus, The University of Tokyo
Professor Emeritus, Waseda University

Degree : Ph.D. in Engineering (1963, The University of Tokyo)

Date of Birth : July 7, 1935

Brief Biography :

- 1963 Ph.D., in Electrical Engineering, The Univ. of Tokyo
Associate Professor, Institute of Industrial Science, The Univ. of Tokyo
- 1964 Research Leader, Institute of Space and Aeronautical Science, The Univ. of Tokyo
- 1977 Professor, Institute of Industrial Science, The Univ. of Tokyo
- 1978 Researcher, School of Electrical Engineering, Purdue Univ.
- 1991 Professor, Nagaoka Univ. of Technology
- 1992 Professor, Faculty of Science and Engineering, Waseda Univ.
- 1994 Visiting Professor, National Center for Science Information System
- 1996 Professor Emeritus, The Univ. of Tokyo
- 1996 Board Member, Japan Science and Technology Corporation
- 1996 Member, Japan Prize Selection Committee (The Japan Prize Foundation)
- 2000 Visiting Professor, National Institute of Informatics
- 2003 Chair, IEEE Tokyo Section
- 2004 Director, Information Technology Research Organization, Waseda Univ.
- 2006 Professor Emeritus, Waseda Univ.

Other

Chairman, Radio Regulatory Council, Ministry of Internal Affairs and Communications
President, Institute of Image Electronics Engineers of Japan (IIEEJ)
President, Institute of Electronics, Information and Communication Engineers (IEICE)
Chairman, Telecommunication Technology Committee
Chairman, Support Center for Advanced Telecommunications Technology Research
Chairman, Mobile Computing Promotion Consortium
President, Telecom Engineering Center, etc.

Main Awards and Honors:

- 1984 Minister's Award for Promotion of Information Science, Ministry of Posts and Telecommunications (MPT)
- 1987 Kobayashi Memorial Award and Achievement Award, IEICE
- 1990 Minister's Award, Research and Development Center for Radio System
- 1996 Minister's Radio Day Individual Commendation, MPT
- 2000 Minister's Info-communications Promotion Month Individual Commendation, MPT
- 2001 Distinguished Achievement and Contributions Award, IEICE
- 2004 Takayanagi Memorial Award
- 2006 NHK Broadcasting Culture Award
- 2014 The Order of the Sacred Treasure, Gold Rays with Neck Ribbon
- 2019 C&C Prize

Other

Honorary Member, IIEEJ
Honorary Member, IEICE, etc.

Main Achievements :

Dr. Yasuhiko Yasuda studied under the late Dr. Hiroshi Inose at The University of Tokyo as his first student, and, after completing the doctoral course at The University of Tokyo's Graduate School of Mathematical and Physical Sciences in 1963, he worked at the Institute of Industrial Science and the Institute of Space and Aeronautical Science, and in 1977 was promoted to a professor at the Institute of Industrial Science. Afterwards, he transferred to Waseda University in 1992 and continued his education and research activities as a professor in the Faculty of Science and Engineering, becoming a Professor Emeritus at The University of Tokyo and at Waseda University.

He has been engaged in research and development on the digitalization of information and communications since its early stages, and in 1961 he proposed the "delta-sigma modulation method" as an analog to digital conversion method. This method has a high affinity with integrated circuits, so it is widely used in a variety of fields such as audio, mobile phones, engine control, and DNA analysis, etc., as well as being incorporated into DSPs, and even now, 60 years after his proposal, it is still a subject of active research and development around the world.

In 1968 he developed the "3-value analog VSB method" as a band compression and transmission method for the high speed fax transmission of newspapers. This method had been requested by a newspaper company, and it enabled high-speed transmission at a rate that was approximately double that of the analog fax methods at the time. As a committee member of the Ministry of Posts and Telecommunications, for the digitalization of faxes as well he contributed to the proposal of the international standard for Japan's G3 faxes.

Furthermore, in 1980 he was the first in the world to propose a "hierarchical image coding" method that enabled the stepwise transmission, display, and storage of images. This method has been adopted as an international standard for still and moving images, and is also widely used in hierarchical transmission for digital broadcasting and for video distribution methods on the Internet.

In the field of information and communication he has led research on information networks and has made numerous pioneering achievements that have contributed to the development of information and communications engineering.

Additionally, he has been a member and chairman of academic societies and committees for many years, has worked on formulating digital broadcasting standards in Japan, and has made numerous contributions to the development, practical application, and dissemination of information and communications engineering.

For these achievements he has received numerous honors, such as the "Order of the Sacred Treasure, Gold Rays with Neck Ribbon," the Ministry of Posts and Telecommunications Minister's Award, and achievement awards from academic societies.

In recognition of his pioneering research on various signal processing methods for analog-to-digital conversion and video coding, and for his development and dissemination of information and telecommunications systems, Dr. Yasuhiko Yasuda is hereby awarded the Okawa Prize.