

Citation

For pioneering and outstanding achievements in the research and development of computer systems and in the advancement of the computer industry as well as distinguished contributions to the development of interdisciplinary fields based on informatics in higher education.



Dr. Hideo Aiso

Positions and Organizations :

Professor Emeritus, Keio University
Director and Past President, Tokyo University of Technology

Degree : Doctor of Engineering (Keio Univ., 1968)

Date of Birth : March 3, 1932

Brief Biography :

- 1955 Graduated from the Department of Electrical Engineering, Faculty of Engineering at Keio University
- 1957 Completed Master's program at the Graduate School of Engineering, Keio University, with a major in Electrical Engineering
- 1957 Research Assistant, School of Engineering, Osaka University
- 1957 Technical Official, Electronics Department, Industrial Technology Office, Electrotechnical Laboratory, Ministry of International Trade and Industry
- 1960 Research Assistant, Digital Computer Laboratory, University of Illinois
- 1971 Professor, Department of Electrical Engineering, Faculty of Engineering, Keio University
- 1982 Visiting Professor, Downing College and Computer Laboratory, University of Cambridge
- 1990 Dean and Professor, Faculty of Environment and Information Studies, Keio University
- 1994 Chairman and Professor, Graduate School of Media and Governance, Keio University
- 1999 Dean and Professor, School of Media Science, Tokyo University of Technology
- 1999 Professor Emeritus, Keio University
- 1999 President, Tokyo University of Technology
- 2008 Director, Tokyo University of Technology
- 2009 Professor Emeritus, Tokyo University of Technology

Main Awards and Honors:

- 1968 Minister of International Trade and Industry Award
- 1977 U.S. AFIPS National Computer Conference's Best Paper Award
- 1979 Institute of Electronics, Information and Communication Engineers Best Paper Award
- 1980 Information Processing Society of Japan Best Paper Award
- 1980 Institute of Electronics, Information and Communication Engineers Best Paper Award
- 1987 Minister of International Trade and Industry Individual Award
- 1995 Information Processing Society of Japan Achievement Award
- 1995 Medal with Purple Ribbon
- 2006 The Order of the Sacred Treasure, Gold Rays with Neck Ribbon
- 2008 C&C Prize
- 2009 Takayanagi Memorial Award

Main Achievements :

In the latter half of the 1950s, Dr. Hideo Aiso engaged in research and development on the ETL Mark IV, Mark V and Mark VI transistor-based computers at the Electronics Department of the Electrotechnical Laboratory (now part of the National Institute of Advanced Industrial Science and Technology (AIST)). In particular, where the development of the Mark IV was concerned, there was a need to devise a basic circuit that would work with as few transistors as possible due to the high cost of transistors, around 5,000 yen each at the time, (a university graduate's starting salary was around 13,000 yen at the time), but Dr. Aiso devised a dynamic logic circuit working with a single transistor by taking advantage of pulse-wave techniques. Furthermore, he demonstrated the circuit's operating stability and usefulness, including installing a high-speed magnetic-drum memory and an arithmetic unit using a decimal fixed-point value method in line with EDSAC, and the Mark IV was

able to begin operating in the fall of 1957.

Additionally, with the Mark V and Mark VI, Dr. Aiso engaged in making computers with enhanced functionality, speed, size and practical applications. Through the Electrotechnical Laboratory, he led a group of companies that aimed to move computers to domestic production, and made major contributions to developing and commercializing domestically-produced transistor-based computers.

In 1971, Dr. Aiso took up a new post as a professor at the Department of Electrical Engineering in the Faculty of Engineering at Keio University, and following that also, he consistently worked on researching extensive computer architecture relating to parallel processing, distributed processing, adaptive processing, associative processing, specially designed functional processing and more. He formed an extremely advanced research organization within Japan and achieved outstanding results that included receiving four Best Paper Awards from the Institute of Electronics, Information and Communication Engineers and other organizations, beginning with the U.S. National Computer Conference's Best Paper Award. Furthermore, as a result of his preeminent leadership and upstanding character, Dr. Aiso also fostered a large number of researchers and engineers who are active on the front lines of this field today. Where university professors are concerned, for example, Dr. Aiso helped to foster 10 professors who are active at Keio University, 4 at the University of Tokyo, 18 at 15 other universities and 9 at 7 universities overseas, as well as more than 20 individuals who are consultants or who have served as board members at companies.

Moreover, during this time, Dr. Aiso also made proactive contributions as the chair of committees for promoting national projects such as fifth-generation computers, supercomputers and interoperable technologies for information processing. He played an active role as an opinion leader in the field of computer architecture throughout the 1970s and 1980s.

Dr. Aiso performed a leading role in founding the Faculty of Environment and Information Studies, which viewed various fields of learning transversely with information technology as the base, at Keio University in 1990, and in establishing the Graduate School of Media and Governance in 1994, and he served as the Faculty's first dean and the Graduate School's first chair. He subsequently moved to Tokyo University of Technology in 1999, where he participated in setting up Japan's first School of Media Science and served as the first dean of the School. In June of the same year he was appointed as President of the university. While at Tokyo University of Technology Dr. Aiso continued to actively engage in reorganizing the School of Engineering and the Graduate School, and he remains involved in running the university now as Director. As a result of these efforts, Dr. Aiso has created a legacy of important knowledge and suggestions relating to new approaches to university education and research and the development of the information environment based on "information science" and "media science," academic spheres that extend across various fields of learning.

As a result of this outstanding track record in education and research in the field of information engineering over a period of many years, Dr. Aiso has been presented with numerous awards, including a Medal with Purple Ribbon and The Order of the Sacred Treasure, Gold Rays with Neck Ribbon, as well as an Achievement Award from the Information Processing Society of Japan.

In this way, Dr. Hideo Aiso has engaged in the research and development of computer systems as a pioneer from the dawn of the computer era and has made a massive contribution to the advancement of Japan's computer-related industries. Furthermore, he has contributed to cultivating interdisciplinary fields based on information science and to enhancing the education and research environment, as well as fostering a large number of distinguished personnel. The Okawa Prize is hereby presented to Dr. Aiso in commendation of those achievements.