Tadashi Watanabe Receives 2006 Seymour Cray Award

Tadashi Watanabe, of Japan’s RIKEN Next-Generation Supercomputer R&D Center, recently received the 2006 IEEE Computer Society Seymour Cray Computer Science and Engineering Award in a special ceremony at the annual SC conference. Watanabe received the 1998 IEEE/ACM Eckert-Mauchly Award for his contributions to the design of supercomputers with multiple/parallel vector pipeline and programmable vector cache architectures.

In 1968, Watanabe joined communications giant NEC, where he worked on the development of large-scale computers until 2005. He was the chief designer of the first supercomputer introduced by NEC. Released in 1983, the SX-2 was the world’s fastest computer at the time.

Watanabe’s award citation reads “for serving as lead designer of the NEC SX series of supercomputers, and especially for the design of the Earth Simulator, which was the world’s fastest supercomputer from 2002 to 2004.”

The Earth Simulator is based on NEC’s SX-6 architecture. It consists of 640 nodes, with eight vector processors and 16 Gbytes of computer memory at each node, for a total of 5,120 processors and 10 Tbytes of memory. The Earth Simulator has posted speeds of up to 35.86 Tflops.

The IEEE Computer Society established the Cray Award in 1997 to recognize individuals whose innovative contributions to high-performance computing systems best exemplify the creative spirit demonstrated by supercomputing pioneer Seymour Cray. Previous recipients of the award include Glen Culler, Monty Denneau, and John Hennessy.

For further information on the Cray and other IEEE Computer Society Awards, visit www.computer.org/awards.

Edward Seidel Honored with Sidney Fernbach Award

Edward Seidel, founding director of Louisiana State University’s Center for Computation & Technology, received the 2006 IEEE Computer Society Sidney Fernbach Award in a special ceremony at the annual SC conference. The IEEE Computer Society established the award in 1992 in memory of Sidney Fernbach, a pioneer in the development and application of high-performance computers to solve large computational problems.

In 1998, 2001, and 2002, Seidel won the HPC Challenge award at SC. The HPC Challenge, funded today by DARPA, is a suite of tests that examine the performance of sophisticated architectures using kernels with memory access patterns more challenging than those of the widely used Linpack benchmark.

While investigating the potential of using a specific algorithm to solve a particular form of the Einstein equations—which describe how space-time curves in response to its matter content—Seidel realized he could develop a general approach to solving a broad spectrum of partial differential equations by using a variety of algorithms. His research led to the development of the open source Cactus ToolKit, a comprehensive, modular tool for collaborative high-performance computing.

Seidel’s citation reads, “For outstanding contributions to the development of software for HPC and Grid computing to enable the collaborative numerical investigation of complex problems in physics; in particular, modeling black hole collisions.”

In 2001, Seidel received the prestigious IEEE/ACM Gordon Bell Prize for achievement in high-performance computing. He is Floating Point Systems Professor in the Louisiana State University Departments of Physics & Astronomy and Computer Science.
James Pomerene Garners Joint IEEE/ACM Award

Retired IBM research scientist James Pomerene recently received the 2006 IEEE/ACM Eckert-Mauchly Award in a special ceremony at the annual International Symposium on Computer Architecture.

Pomerene served as chief engineer of the first electronic digital computer built by Princeton's Institute for Advanced Study in the early 1950s. He then moved to IBM to become a key early player in the design of the 1962 Harvest supercomputer. Harvest incorporated then-cutting-edge high-speed tape drives and super high-speed memory. In 1965, Pomerene headed an IBM team charged with preliminary design of the Parallel Network Digital Computer, where he made several important contributions to highly available memory systems.

Pomerene’s citation reads, “For pioneering innovations in computer architecture, including early concepts in cache, reliable memories, pipelining and branch prediction, for the design of the IAS computer and for the design of the Harvest supercomputer.”

Pomerene is an IEEE Life Fellow and a member of the National Academy of Engineering. He has authored or coauthored numerous technical papers and one book, and he holds or shares 17 patents. Pomerene received the IBM Outstanding Innovation Award in 1968, the IEEE Computer Society Pioneer Award in 1986, and the IEEE Edison Medal in 1993.

Winners of the Eckert-Mauchly Award, which recognizes outstanding contributions to the field of computer and digital systems architecture, receive a certificate and a $5,000 honorarium.

For further information on the Eckert-Mauchly Award and other IEEE Computer Society honors, visit www.computer.org/awards.

Computer Society Pioneer Awarded Turing Medal

IBM Fellow Emerita Frances E. Allen, 2004 recipient of the IEEE Computer Society Pioneer Award, has been named recipient of the 2006 A.M. Turing Award.

Since the early 1960s, Allen’s work has focused on compilers and high-performance computing systems. Her pioneering compiler work culminated in algorithms and technologies that are the basis for the theory of program optimization today and are widely used throughout the industry. Allen who received the 2002 Association for Women in Computing’s Augusta Ada Lovelace Award, retired from IBM in 2002.

The Turing Award, presented each year by the ACM, is one of the top honors given to computing professionals. It honors legendary English mathematician, cryptographer, and logician Alan M. Turing. The Intel-sponsored award carries a $100,000 honorarium.

Allen is the first woman to receive the Turing Award. Previous recipients include John Hopcroft, Fred Brooks, and Vint Cerf.
Computer Society Announces Larson, UPE, and OCA Student Winners

In 1983, the IEEE Computer Society Lance Stafford Larson Award was established by the family of past IEEE president Robert Larson in memory of their son, who died in an electrical accident when he was an undergraduate at the University of Maryland. The family created this award to encourage students to develop excellence in their communication skills and to motivate students toward achievement in computer science. One award of $500 is given each year to the first-place winner. The winner of the 2006 Larson Award is Raihan Masud of Bangladesh’s Khulna University of Engineering and Technology.

International honor society Upsilon Pi Epsilon and the IEEE Computer Society cooperate each year to present the UPE Award for Academic Excellence. The UPE Award is intended to recognize the importance of academic achievement among future computer professionals. Two outstanding students earned 2006 UPE honors: Juan Gomez of Colombia’s Santiago de Cali University and Larson Award winner Raihan Masud of Bangladesh’s Khulna University of Engineering and Technology.

The IEEE Computer Society’s Outstanding Chapter Award is an honor presented once a year to a chapter or student branch chapter that has provided its membership with the best overall set of programs and activities. The competition is based on success in technical activities, society activities, and the enlistment and advancement of Computer Society members. The award criteria allow large and small chapters to compete on an equal basis. The winner of the 2006 Outstanding Chapter Award is the student branch chapter of India’s Thadomal Shahani Engineering College. Chapters selected for the award receive an all-expense-paid visit from an expert participating in the IEEE Computer Society Distinguished Visitor Program.

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