The Computer Society's conference program

James H. Aylor, Vice President for Conferences and Tutorials

The Computer Society's conference program is an elaborate and delicate interaction of many individuals, technical interest groups (called technical committees within the society), and other professional societies both at home and abroad.

The Computer Society sponsored or cosponsored over 50 technical meetings and cooperated in an additional 30 technical meetings in 1986. Sponsoring implies not only a significant component of technical involvement but also a significant degree of financial support. Cooperation implies strong technical support for the meeting through the expertise of the members of the society but with no financial involvement.

The approval of all of the technical meetings of the society is handled through the vice president for conferences and tutorials and the Conferences and Tutorials Board. This structure establishes a focal point for the interaction between technical meetings and the technical community responsible for creating the meeting and is essential to the control of a $4 million conference operation.

Three forms. The society's technical meetings have three forms — the conference, symposium, and workshop.

Conferences, which are meetings with more than 300 attendees, include the very successful Design Automation Conference (DAC), International Test Conference, International Conference on Software Engineering, and International Conference on Artificial Intelligence Applications (CAIA). DAC is the largest with an attendance of 3400 and has the world's largest exhibit in the area of design automation. CAIA, initiated in 1985, is the newest and attracts 600 attendees.

The workshop is a forum for the exchange of information related to a very focused technical area. Its attendance is typically less than 100, and it often has no published proceedings. This format encourages the exchange of key technical information among recognized individuals in a field that would not be possible if the discussion were to be published.

Symposia are meetings with an expected attendance of 100-300.

The Computer Society Press publishes the proceedings for the majority of the sponsored conferences to ensure the quality and appearance of the document.

International aspects. Although the society has always had a strong international component in all of its activities, much more emphasis has been placed recently on making the technical meeting truly international. Many of our conferences have international members on their committees; a number of our meetings are being rotated through other countries of the world; and new conferences are being established through a cooperative effort between the Computer Society and technical societies abroad.

In 1984, the First International Conference on Computers and Applications was established with the China Computer Society and held in China. It is being repeated this June, CompEuro, which is being held in Hamburg this May, was established as a joint venture between Region 8 of the IEEE and several European societies to stimulate cooperation among computer professionals in Europe. The Computer Society will host the biannual conference of the International Association of Pattern Recognition in 1990 in Atlantic City, New Jersey.

Directions. The strength of the successful conference program is in the quality and dedication of the technical community represented by the members of the society, in particular the members of the various technical committees. The overall goal of the Conferences and Tutorial Board is to provide the most effective structure and services to support these members.

There is presently a board committee established to assess current activities within the conferences area and to establish the future direction for the area. Its report is due in November.

The conference program is a strong and growing activity within the society. Involvement in conference planning and operation is exciting and technically rewarding. The society is always looking for new volunteers and encourages you to join in conference activities.
Fly-by-wire airliners a topic of FTCS-17

Technology is on the threshold of providing large automated systems that will operate in life-critical environments and will impact major portions of society. One such system is the next generation of airliners, which includes the 737, that will allow fully automated landing systems as well as systems to automatically taxi to any gate at major airports. These airplanes will be an integrating topic across the panels at the 17th Annual International Symposium on Fault-Tolerant Computing, to be held July 6-8 in Pittsburgh, Pennsylvania.

The promise of large automated systems will be the focus of a panel, "Design of Large Automated Systems," and of a keynote address by Raj Reddy, director of the Robotics Institute at Carnegie Mellon University, on robotics and intelligent systems. The requirements of ultra-reliability are the topic of another panel, "Reliability Modeling of Life-Critical Systems," and of the second keynote address by Larry Druffel, director of the new Software Engineering Institute, on reliability issues in software engineering.

The members of the panels tentatively include representatives from the computer and aerospace industries, NASA, FAA, and universities. Additionally, 48 papers on fault-tolerant topics will be presented.

A limited number of travel scholarships supported by industry will be provided for graduate students. For scholarship and conference information, contact John Shen, Carnegie Mellon University, Dept. of Electrical and Computer Engineering, Pittsburgh, PA 15213; (412) 268-3601.

Hewlett-Packard CEO to keynote DAC 87

John A. Young, Hewlett-Packard president and chief executive officer, will discuss the engineering community's response to today's global economy at the 24th annual Design Automation Conference. His keynote address, "Emerging Imperatives for Engineers," will examine the challenges and expectations created for engineers and managers by the shortening of product life cycles and the shifting nature of competitive positions as technology spreads rapidly across national boundaries.

Young, who joined Hewlett-Packard in 1958 after earning a master's in business administration from Stanford University, has served as the firm's president since 1977 and as its CEO since 1987.

The Design Automation Conference, to be held June 28-July 1 in Miami Beach, Florida, will feature 98 exhibits and 130 technical papers and presentations. Paper topics include IC and PCB layout and fabrication, databases, system-level design aids, silicon compilation, and expert systems. The agenda also includes three tutorial sessions and five panels discussions.

For information on DAC registration, contact Pat Pastilli at MP Associates, 7366 Old Mill Trail, Boulder, CO 80301; (303) 530-4333.

Report on the Ninth Annual International Conference on Software Engineering

Lorraine M. Duvall, Duvall Computer Technologies
David Preston, IIT Research Institute

Over 1200 attendees took part in the stimulating and, at times, provocative Ninth Annual International Conference on Software Engineering. The conference, held March 30-April 2 in Monterey, California, also attracted 600 participants for five tutorials and 45 exhibits for a tools fair.

Theme and structure. The theme of the conference, "Formalizing and Automating the Software Process," was chosen to highlight the importance of focusing on the software creation and evolution processes. Additionally, the conference organizers actively pursued participation of the database and artificial intelligence communities because of the increasing effect of these disciplines on software engineering.

The conference was structured in three concurrent tracks: process, formalism, and automation. Each track included technical presentations, focused panels, and tools demonstrations. The panels raised the visibility of work performed in the smaller workshops and provided a perspective by the leaders in the field.

Best Paper Awards were presented by Kouichi Kishida, program co-chair, to Dewayne E. Perry of AT&T Bell Laboratories for "Software Interconnection Models" and to K. Schwan, R. Ramnath, S. Vasudevan, and D. Ogle of Ohio State University for "A System for Parallel Programming."

Opposing views. The technical sessions were introduced by Robert Balzer, program co-chair, who explained the Program Committee's perspective.

Constructing software as a commodity and managing it as a product has, he said, solved the missed-budget and schedule problems of the 60's and 70's. (This was disputed later by one attendee.) Now the post-delivery problem and our inability to maintain software systems must be addressed.

The fundamental causes of these problems, Balzer said, are inaccessibility of design information and failure to recognize the iterative nature of the maintenance activity. The answers lie in building a corporate memory and in separating maintenance from performance. The process must be formalized, automated, and moved from a mathematical discipline to a design discipline. A main challenge is to integrate the artificial intelligence, database, and software engineering technologies.

In the first plenary address, entitled "Software Processes are Software Too," Lee Osterweil presented the thesis that there is no fundamental difference between the software process and other processes. He maintained that software engineering research should be directed at the creation of a process programming language, the construction of a compilation and interpretation system for programs written in it, and the use of these tools in the description of key software processes.

In the second plenary address, Manny Lehman responded with an opposing viewpoint. He expressed strong reservations about process programming and concern over its current emphasis in research. According to Lehman, we need to extract the important and worthwhile elements of process programming. When thoughtfully applied, it can be a useful tool for modeling parts of the process, but it's "too seductive," he said, "to be a subject of graduate student research."

During the question and answer session, Harlan Mills, conference chair for the First International Conference on Software Engineering, said he agreed with Balzer on the state of software engineering. He stated that the social process of the conference was freezing out the intellectual aspect of software engineering. To prove his point, Mills
were winners asked initiated addressed: It the concomitant disappointments, it is important; the process must be explicitly represented; and the process must be facilitated through automation.

A panel on formal specifications brought out the opinion that the development process is completely formalized in the US security community but not in the remainder of the US. This is in contrast to Europe where most software development is partially formal. Don Good indicated that fear growing out of national security issues is the primary motivator for current use of formal methods in the US. Formal methods will not become more widely used until there are strong economic motivations.

Within widely varying views on artificial intelligence, perhaps the most realistic perspective was offered by Barry Boehm. Looking to AI as the philosophical touchstone will continue to raise unrealistic expectations with concomitant disappointments, Boehm said. Yet, if you ignore AI, you will miss a potential solution to some of software engineering’s problems.

Future conferences. The 10th International Conference on Software Engineering will be in Singapore April 11-15, 1988. The 11th ICSE will be held in Pittsburgh, Pennsylvania, in May 1989. The Steering Committee for the ICSE is pursuing alternate sites for the 12th and 13th conferences in 1990 and 1991.

To be considered as a conference site, a proposing country must have a major computer society, be able to draw 500-600 attendees from the host country, have adequate conference facilities, and propose leaders in the software field to provide direction for the conference.

Countries and organizations that would like to be considered for the 12th or 13th ICSE should write a letter of intent to Lorraine M. Duvall, 1317 N. Madison St., PO Box 568, Rome, NY 13440, USA.

Discussion and reaction. Balzer initiated a brown bag “open mike” session on the final day of the conference. In his opening remarks, he articulated three principal questions the conference addressed: Where is the field? Where is it headed? How do we get there? He also stated three assumptions made by the Conference Committee: The process is important; the process must be explicitly represented; and the process must be facilitated through automation.

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