

## CONFERENCE REPORT

# 1993 IEEE International Symposium on Intelligent Control

The 1993 IEEE International Symposium on Intelligent Control (ISIC'93) was held in Chicago, IL, August 25-27, 1993. This was the 8th such symposium and was very successful in terms of quality of the research results presented and in numbers of registered attendees. This is particularly important and encouraging in view of the large number of technical meetings which take place every year that emphasize intelligent approaches and methods in solving engineering problems.

There were 145 registered attendees, representing an increase over previous years, 51 of which were students. The site of the symposium was the Knickerbocker Hotel, a charming hotel built in the 1920s and rich in history, located just a few blocks away from the best shops, museums, and restaurants in Chicago. The weather was perfect for going to the beach, located one block from the hotel, but it seems almost everybody attended the technical sessions!

### Technical Program

The continuing success of any technical meeting depends on the quality of the technical program. Certainly the quality of the papers submitted and presented was high. There were 111 papers accepted, presented Thursday, August 26, and Friday, August 27, in 19 sessions. There was one set of morning sessions and two sets of afternoon sessions each day in four parallel tracks, with plenty of time between for informal discussions over coffee. In addition, there were panel discussions associated with the sessions on hybrid systems, discrete event systems, neurocontrol, and intelligent control in process operations. A special feature was a symposium-wide panel discussion on "Fuzzy versus Conventional Control" Friday afternoon. The organizer and moderator was K.M. Passino of The Ohio State University, with panel members M. Tomizuka of the University of California Berkeley, G. Vachtsevanos of the Georgia Institute of Technology and S. Yurkovich of The Ohio State University. This panel



*Bernard Widrow, Plenary Speaker with Panos Antsaklis, the General Chair of ISIC'93 (after Thursday's plenary lecture) in the Grand Ballroom of the Knickerbocker Hotel in Chicago.*

discussion generated significant interest and attracted more than 100 attendees.

In deciding the procedures for paper reviewing and processing, the aim was to achieve the highest quality technical presentations possible. For this, the format of the very successful IEEE Conference on Decision and Control (CDC) was followed, with appropriate modifications to account for the smaller size of the symposium and to focus on particular approaches emphasizing intelligent methods. The result was a strong program.

One might sense the flavor of some of the research presented by looking at the titles of the sessions. Of course, this is second best to actually attending the symposium. There were sessions on adaptive systems, hierarchical controllers and architectures, telerobotics architectures; three sessions on neural control; and sessions on sensing and control for industrial processes, hybrid systems, robotic hands and mobility, multisensor fusion and integration, discrete event systems, perception, theory, autonomous systems, fuzzy control, learning control, intelligent control in process applications, on planning, and on fuzzy and neural control.

### Plenary Lectures

There were Plenary Lectures each morning of the symposium. On Thursday, Professor Bernard Widrow of Stanford University, well known for his work on adaptive filtering, the LMS algorithm and neural networks, discussed "Learning Control Systems." On Friday, Dr. Herbert Rauch of Lockheed Co., a recognized expert on applications of control methods to aerospace problems, and also the previous Editor of IEEE Control Systems Magazine and current President of the Control Systems Society, spoke on "Issues in Intelligent Fault Diagnosis and Control Reconfiguration." During both plenary lectures, videotapes were shown illustrating the application of control techniques to the truck backer-upper control problem and to the control reconfiguration of a fighter aircraft. These videotapes were also shown in the afternoon during breaks.

### Preconference Workshops

On August 25 two preconference tutorial workshops were offered: "An Introduction to Learning Control," organized by Jay Farrell and Walter Baker of the

Charles Stark Draper Laboratory, Cambridge, MA, and "Fuzzy Control: Theory and Applications" by Kevin M. Passino and Steve Yurkovich of The Ohio State University, Columbus, OH. In addition, the same day, Alex Meystel of Drexel University, Philadelphia, PA, organized the "Fifth Workshop on Architectures for Intelligent Control Systems," giving researchers participating in the Architectures for Intelligent Control Systems Discussion List (AICS-L) — email: meysteam@duvm.ocs.drexel.edu — an opportunity to exchange views.

### Proceedings

The one-volume 622-page *Proceedings* contains texts of papers presented at the symposium, photographs and short biographies of the two plenary speakers, and a list of the previous seven ISICs. Copies are available from IEEE. They may be

ordered by calling 800-678-IEEE (in the U.S.A) or 908-981-0060 (outside the U.S.A) and giving the IEEE publication number 93CH3278-9. Mail orders may be addressed to: IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854 U.S.A.

### Special Thanks

The success of the ISIC'93 is due to the time and effort contributed by a number of volunteers. Special thanks go to Kevin Passino, of The Ohio State University, the program chair, who with the help of his program committee and his co-chair Umit Ozguner, put together the technical program. The program was assembled in April during a special meeting in Columbus, OH. I would like to thank the organizing and program committees for taking time from their busy schedules to travel to Columbus. Jay Farrell, of the Draper Lab, ran the registration and Mike Leahy of the

U.S. Air Force was in charge of publications. Nothing really happens in the conference world without funds, and Jim Taylor of Odyssey Research Associates, Ithaca, NY, took care of these details as finance chair. Chi-haur Wu, of Northwestern University, took care of all other details and problems as the local arrangements chair. My sincere thanks to the organizing committee for its dedication and efforts. I also would like to thank my students and Chi-haur Wu's students for helping out at the conference.

The contributions of all the participants are, of course, the main ingredient and the reason for a successful conference. So, I would like to sincerely thank them all for their contributions towards making this meeting a memorable event.

*Panos Antsaklis  
General Chair, ISIC'93*