CONFERENCE NEWS

IECON'92 CONFERENCE

The IECON'92 (the International Conference on Industrial Electronics, Control, Instrumentation and Automation) was held from on Nov. 9 to 13 at Marriot Mission Valley in San Diego (USA). This conference was sponsored by the Industrial Electronics Society of the IEEE and the Society of Instrument and Control Engineers of Japan. 293 papers were presented in 46 sessions. 7 tutorial session (Robust Motion & Robot Control, Neural Networks Application and Silicon Microstructure & Sensors) were organized on Nov. 9. Dr. Eric E. Summer, IEEE past President, talked about "Reengineering our Profession" in a keynote speech. Prof. William A. Gruver, Simon Fraser University, considered "Critical Technologies and Applications of Robotics and Automations", and Prof. Hiro Yamazaki, the University of Tokyo, talked about "Advanced Intelligent Sensing System Using Sensor Fusion" in the plenary session. We organized 5 parts on Robotics, CIM & Automation, Signal Processing & System Control, Power Electronics & Motion Control, Intelligent Sensors & Instrumentation and Emerging Technologies.

In the Robotics, CIM & Automation part 11 sessions were organized, including one special session. The topics were robot control, force/position & neural network control, mobile robot, low level vision, active & high level vision, CIM & factory automation and process control in CIM. In the Signal Processing & System Control part, 9 regular sessions and 2 special sessions were organized; the topics were control design, intelligent control, nonlinear systems, servo control systems, microelectronic system, process control & parameter estimation, image & speech processing and signal processing & transmission. The Power Electronics & Motion Control part included 15 regular sessions and one panel discussion. The topics were motion control with induction motors & AC machines, motion control with permanent magnet synchronous motors, high frequency converters, design & control of converters, simulation & control of converters, converter control & applications, power devices & pulse converters and active/passive filtering with converters. In the Intelligent Sensors & Instrumentation part, 4 regular sessions and one special session were organized; the topics were sensors for physical quantities, technology for sensors & measuring electronic circuit, optical measurement and sensor & image processing. In the Emerging Technologies part, 5 regular sessions were organized, the topics being fuzzy logic & system, industrial electronics applications, computers & communications, neural networks-diagnostics, imaging & recognition systems and neural networks-nonlinear & control applications & technologies.

The IECON'93 will be held from on Nov. 15 to 19, 1993 at Hyatt Regency-Maui in Maui, Hawaii (USA). Papers are welcome for the conference.

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Conference Reports

CONFERENCE ON DOCUMENT IMAGING

A two day conference devoted to document image processing took place at Image Processing '92 (NEC, Birmingham, UK, 10–12 November., 1992).

This well attended conference was case study led and featured speakers who used document image processing (DIP) systems in their workplace, enabling delegates to learn about the benefits and potential pitfalls of installing such systems.

The first day saw an overview and look at the current status of DIP from David Best (Touche Ross) and Marc Fresko (KPMG). This was followed by a series of papers outlining the pros and cons of implementing systems in the specific areas of: insurance, legal, local government and credit cards.

The final day of the conference included papers on the benefits of systems; managing installations; integrating image-based applications, and the effects and future of document management on business operations and information technology.

Papers included an outline of the successful implementation of ImagePlus in the Customer Accounting Department at Severn Trent Water. The department handles around 2.2 million customer contacts per year and the paper described how Image and Workflow Management have been used to improve customer service, quality and business efficiency. There was a 40% increase in customer contacts in the years 1990/91 and 1991/92 and Severn Trent Water believe the existing resource levels would have proved insufficient, without the increased productivity which resulted from the use of DIP.

Philip Story, Managing Director, Reflection Systems, described two large scale applications using optical disk technology for the on-line archiving of historically important documents. For example, the National Railway Museum's collection of photographs dating back to 1866 has already reached 750,000 and is projected to reach 1.25 million within two or three years as new collections are acquired. The physical problems of archiving and retrieving the collection would make it impossible to provide public access without computer-based

optical storage. The Museum feels that its investment in the system will encourage visitors and help increase revenue since it opens up various additional commercial possibilities such as the sales of photographic prints.

The Image Processing '92 exhibition and conference had over 4000 visitors and 101 exhibitors.

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AI'92...(Hobart, Tasmania, Australia, 16th to 18th November, 1992)

AI'92 was Australia's Fifth Joint Conference on Artificial Intelligence. It covered both practical and research issues and was divided into two streams, one consisting of formal papers and the other of informal poster sessions.

The formal papers covered a range of research topics including expert systems, uncertainty, neural networks, hybrid systems, vision, distributed *AI*, natural language, theory, knowledge acquisition, machine learning and robotics.

The most interesting results were reported in the machine learning field. J.R. Quinlan presented a new machine learning system, called M3, which is capable of learning with continuous classes rather than discrete categories. G. Webb introduced an innovative approach to knowledge acquisition which combined machine learning principles with human knowledge elicitation techniques. P. Compton and B. Gaines described a technique for the induction of "ripple-down" rules. These are rules which are specifically designed so that corrections to a rule-base are guaranteed to affect only a small, well-defined set of previous cases.

Only one robotics paper was presented at the conference. It was presented by A. Zelinsky and described a navigation system for an autonomous mobile robot. The system combined local obstacle avoidance with high-level path planning.

The poster sessions mainly described current expert system applications and knowledge engineering methodologies. Several sessions described the use of other artificial intelligence techniques.

A highlight of the conference was the Technology Transfer Session, at which local industry representatives and applications developers were able to explore the artificial intelligence tools available and discuss ways in which these tools could be fitted to the needs of industry. The major outcome of this discussion was an affirmation that, to be of practical use, intelligent systems have to be embedded in and integrated with existing software and existing user interfaces.

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