Preliminary Program

1986 Real-Time Systems Symposium
December 2-4, 1986 • Fairmont Hotel • New Orleans, LA

Sponsors:
The Computer Society of the IEEE
TC Database Systems
TC Distributed Computing Systems
TC Fault-Tolerant Computing
TC Operating Systems
TC Software Engineering

Scope: This Symposium addresses all aspects in the design, development, and analysis of real-time systems.

General Chair: John A. Stankovic, University of Massachusetts
Program Chair: Hang G. Shin, University of Michigan

Tuesday, December 2, 1986
8:00-8:45 Registration
8:45-9:00 Welcoming Ceremony
9:00-10:00 Programming Systems
- An On-Line Algorithm for Real-Time Tasks Allocation—Sadegh Davari, Sudarshan H. Dhall, University of Oklahoma
- A Study of Quasi-Dynamic Load Balancing in Soft Real-Time Distributed Computer Systems—Suresh Singh, James F. Kurose, University of Massachusetts
- Instruction Level Mechanisms for Accurate Real-Time Task Scheduling—Richard A. Voza, Trevor N. Mudge, The University of Michigan

10:00-10:30 Coffee Break
10:30-12:00 Architecture
- An Architecture and an Interconnection Scheme for Time-Sliced Buses in Real-Time Processing—A. Kostaki, S. Paton, Fabrizio Lombardi, University of Colorado
- Realtime Response on a Message Based Multi-processor—Robert Olson, ELSI
- A Real-Time Distributed Processing System—Timothy G. Saponas, Intel Corporation

12:00-1:30 Lunch
1:30-5:00 Fault Tolerance I
- Real-Time Fault-Tolerant Design for VLSI Processor Arrays—S. Y. Kang, C. U. Chang, Chen-Wen Jen, University of Southern California
- On-Line Detection of Errors in Systolic Arrays—Jung-Hwan Kim, Subhakar M. Reddy, University of Iowa
- A New Concurrent Memory-Reference Checking Technique—R. A. M. F. R. Shonvalott, K. R. H. Smith, University of Toronto

5:00-5:30 Coffee Break
5:30-7:00 Reliability/Performance Modeling
- A Probabilistic Model of Algorithm-Based Fault Tolerance in Array Processors for Real-Time Systems—Jacobs A. Abrahams, Prathap Banerjee, University of Illinois at Urbana
- Implementation and Reliability Estimation of Dynamic Redundancy Networks—Merkoe Jang, H. J. Siegel, Purdue University
- Analysis of the Execution Time of Real-Time Tasks—Michael Woodoberry, The University of Michigan

Wednesday, December 3, 1986
8:00-9:00 Performance Analysis
- A Graph-Theoretic Approach for Timing Analysis in Real-Time Systems—Farnam Jahanian, Aloysius H. Moi, University of Texas at Austin
- Performance Modeling and Measurement of Real-Time Multiprocessors with Time-Shared Buses—Michael Woodoberry, The University of Michigan

9:00-10:00 Intercommunications
- A Virtual Time CSMA Protocol for Hard Real-Time Communications—K. R. Chang, University of Washington
- Protocols for Time-Sliced Synchronous Process Communications—S. B. Davidson, Irup Lee, University of Pennsylvania

10:00-10:30 Coffee Break
10:30-12:00 Operating Systems
- A Distributed Kernel Model for Reliable Group Communication—K. R. R. Thompson, Samuel T. Chanson, University of British Columbia
- High-Performance Operating System Constructions for Real-Time, Robotic Software—L. B. L. Pham, G. Chang, H. S. Schwan, Ohio State University
- Real-Time Performance of a Completely Distributed Operating System—Douglas C. Daniels, Horst J. Wiede, Wayne State University

12:30-1:30 Lunch
1:30-5:00 Fault Tolerance II
- Dynamic Dynamic Bounding of Groups of Tasks with Precedence Constraints in Distributed Hard Real-Time Systems—John A. Stankovic, King County, University of Washington
- Dynamic Scheduling Under Deadline Constraints: A Comparison of Scheduling and Receiver-Initiated Approaches—Hung-Yang Chang, Ming-Lieng, University of Wisconsin
- Solutions for Some Practical Problems in Priority-Preemptive Scheduling—John P. Lehoczky, Ragunathan Rajkumar, Lui Sha, Carnegie-Mellon University

15:00-15:30 Coffee Break
15:30-17:00 Task Allocation/Load Balancing
- An On-Line Algorithm for Real-Time Task Allocation—Sadegh Davari, Sudarshan H. Dhall, University of Oklahoma
- A Study of Quasi-Dynamic Load Balancing in Soft Real-Time Distributed Computer Systems—Suresh Singh, James F. Kurose, University of Massachusetts
- Instruction Level Mechanisms for Accurate Real-Time Task Scheduling—Richard A. Voza, Trevor N. Mudge, The University of Michigan

Thursday, December 4, 1986
8:30-10:00 Fault Tolerance II
- Error Propagation in a Digital Atomic Processor: A Simulation-Based Study—D. Lamelina, Paul H. Lyer, University of Illinois at Urbana
- Practicality of Non-Interfering Checkpoints on Distributed Database Systems—Sang H. Son, University of Virginia

10:00-10:30 Coffee Break
10:30-12:00 Applications
- A Real-Time Juggling Robot—David H. Jameson, Mark D. Donner, IBM T. J. Watson Research Center
- Real-Time Direct-Access on a VLSI Chip—Steven L. Leung, Michael Shambrot, Michigan State University

To Make Reservations at the Symposium, call or write directly to:
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