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Descrizione fisica	1 online resource (x, 321 pages) : illustrations
Disciplina	004.33
Soggetti	Real-time data processing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di contenuto	Foreword -- Committees -- Reviewers -- Session 1: Scheduling I -- Bounding Completion Times of Jobs with Arbitrary Release Times and Variable Execution Times -- On Task Schedulability in Real-Time Control System -- A Multiframe Model for Real-Time Tasks -- Session 2 Experimental Systems and Applications -- Middleware for Distributed Industrial Real-Time Systems on ATM Networks -- Analysing APEX Applications -- Operating System Extensions for Dynamic Real-Time Applications -- Session 3: Formal Methods -- Approximate Reachability Analysis of Timed Automata -- Correctness of Vehicle Control Systems -A Case Study -- Reducing the number of clock variables of timed automata -- Predictability of Real-Time Systems: A Process-Algebraic Approach -- Session 4: Synchronization -- A Framework for Implementing Objects and Scheduling Tasks in Lock-Free Real-Time Systems -- Optimizing a FIFO, Scalable Spin Lock Using Consistent Memory -- Work in Progress -- Session 5: Invited Talks on System Requirements -- Session 6: Model and Tools -- The MSP.RTL Real-Time Scheduler Synthesis Tool -- Tool Support for the Construction of Statically Analysable Hard Real-Time Ada Systems -- High Availability in The Real-Time Publisher/Subscriber Inter-Process Communication Model -- Session 7: Communications -- Structuring Communication Software for Quality-of-Service Guarantees -- Multirate Scheduling for Guaranteed and Predictive Services in ATM Network -- Message Transmission with Timing Constraints in Ring Networks -- On Supporting Time-Constrained Communications in

WDMA-based Star-Coupled Optical Networks -- Session 8: Scheduling II -- Real-Time Queueing Theory -- An Optimal Pinwheel Scheduler Using the Single-Number Reduction Technique -- Integrated Scheduling of Multimedia and Hard Real-Time Tasks -- EEE Real-Time Systems TC meeting -- Session 9 Databases -- Commit Processing in Distributed Real-Time Database Systems -- Value-cognizant Admission Control for RTDB Systems -- Scheduling Transactions with Temporal Constraints: Exploiting Data Semantics -- Session 10 Timing Analysis -- Cache Modeling for Real-Time Software: Beyond Direct Mapped Instruction Caches -- Analysis of Cache-related Preemption Delay in Fixed-priority Preemptive Scheduling -- A Method for Bounding the Effect of DMA I/O Interference on Program Execution Time -- Session 11: Resource Allocation and System Implementation -- A Proportional Share Resource Allocation Algorithm for Real-Time, Time-shared Systems -- Visual Assessment of a Real-Time Systems Design: A Case Study on a CNC Controller -- Optimizing Interprocess Communication for Embedded Real-Time Systems -- Author Index.

Sommario/riassunto

Encompassing both computer-science and engineering aspects of real-time systems the 31 papers cover scheduling, experimental systems and applications, formal methods, synchronization, models and tools, communications, databases, timing analysis, resource allocation, and system implementation. Among the specific topics are optimizing interprocess communications for embedded systems, analyzing cache-related pre-emption delay in fixed-priority preemptive scheduling, exploiting data semantics to schedule transactions with temporal constraints, queueing theory, message transmission with timing constraints in ring networks, and approximate reachability analysis of times automata. No subject index. Annotation copyrighted by Book News, Inc., Portland, OR.
