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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Adaptation, Power Consumption and Scheduling -- Energy Management for Embedded Multithreaded Processors with Integrated EDF Scheduling -- Reducing System Level Power Consumption for Mobile and Embedded Platforms -- Implementing Control Algorithms Within a Multithreaded Java Microcontroller -- Adaptivity for Quality and Timeliness Flexible Real-Time Systems -- Adaptation and Agents -- Apricot Agent Platform for User-Friendly Mobile Service

Development -- Support of Reflective Mobile Agents in a Smart Office Environment -- Learning Action Sequences Through Imitation in Behavior Based Architectures -- Adaptation and Services -- Self-healing Execution of Business Processes Based on a Peer-to-Peer Service Architecture -- Runtime Adaptation of Applications Through Dynamic Recomposition of Components -- An Observer/Controller Architecture for Adaptive Reconfigurable Stacks -- Application Adaptable Systems -- The Organic Features of the AMIDAR Class of Processors -- Reusable Design of Inter-chip Communication Interfaces for Next Generation of Adaptive Computing Systems -- DESCOMP: A New Design Space Exploration Approach -- Design Space Navigation for Neighboring Power-Performance Efficient Microprocessor Configurations -- An Efficient Frequency Scaling Approach for Energy-Aware Embedded Real-Time Systems -- Pervasive Computing and Communication -- Towards Autonomic Networking Using Overlay Routing Techniques -- Context-Based Storage Management for Wearable and Portable Devices -- A File System for System Programming in Ubiquitous Computing.

Sommario/riassunto

The key challenge for future computer systems is dealing with complexity. On one hand this involves internal system complexity which has increased exponentially over recent years. Here the main objectives are to maintain system reliability and to keep the design and maintenance effort manageable, while at the same time continuing to provide new functionality and increasing system performance. This has been the focus of so-called autonomous computing, which aims to bring self-configuration and repair to a wide range of computing systems. On the other hand future computer systems are more and more becoming integrated into the fabric of everyday life and thus have to deal with the complexities of the real world. They will become smaller, more appropriate for their use, integrated into everyday objects, and often virtually or physically invisible to the users. They will also be deployed in a much higher quantity and penetrate many more application areas than traditional notions of computer systems. This requires computer systems to be adaptable within a much wider range of possible tasks, subjected to much harsher conditions. To provide such features and functionality, computer devices will become tiny yet still increase in system complexity; they must consume less power, while still supporting advanced computation and communications, such that they are highly connected yet still operate as autonomous units. Pervasive and ubiquitous computing research addresses such issues by developing concepts and technology for interweaving computers into our everyday life. The principal approach is to enhance system functionality and adaptability by recognizing context and situations in the environment.
