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IEEE Computer Society
TECHNICAL COMMITTEES

Any Computer Society member can join. Just note the subject areas on this and the facing page and use the reader service card to select the technical committee or committees closest to your interest.

Message from the Vice President for Technical Activities

Those of you who do not participate in a technical committee are missing the best part of belonging to our professional society. Technical committees are really groups of professionals with common technical interests. These groups typically sponsor one or two small technical meetings each year, and often organize sessions at larger conferences, secure papers for publications, and act as a technical resource for other IEEE and IEEE CS activities. You participate by attending some of the technical meetings, and by lending a hand in some of the functions. A wide range and level of participation are possible, largely at your own initiative. We look forward to having you join us.

Merlin G. Smith

Computer Architecture

The TC on Computer Architecture is concerned with research and development in the integrated hardware and software design of both general-purpose and special-purpose digital computers. Its scope covers not only processor architecture, but also the architecture of computer systems containing a multiplicity of interconnected processors. Machines of interest range from microcomputers through minicomputers, and include parallel and associative processors, computers which directly execute higher level languages, distributed processors, and computer networks. From requirements analysis through implementation techniques, TCCA considers all issues which influence computer architecture, such as testability, performance measurement, fault tolerance, packaging, semiconductor technology, and executive software.

CIRCLE READER SERVICE NO. 500

Computer Communications

The TC on Computer Communications focuses primarily on those systems integrating computing functions and telecommunications facilities into networks. Within such systems, a broad scope is emphasized to allow communications of significant developments in the rapidly developing field. Legal, regulatory, and management issues are addressed in addition to technical subjects. Technical areas of interest include topology; protocols; transmission facilities including satellite and value-added common carriers; devices, including multiplexing, concentrating, front ends; and other general architectural issues.

CIRCLE READER SERVICE NO. 501

Computer Elements

Interests lie in the coordination between the characteristics and technologies of circuits and processes (such as signaling and transmission), devices, and subsystems considered as elements, and the requirements imposed on them by processes, devices, subsystems, and systems within the computer context. Items of predominant interest in recent years have included microprocessor applications; LSI application and testing; electronic disk (CCD, magnetic bubbles) costs, characteristics, and implications; packaging and interconnection of high-speed logic; application-oriented and intelligent terminals, and systems based on them; electrically alterable ROM devices and implications; technology forecasting and baselines from which to begin.

CIRCLE READER SERVICE NO. 502
Computer Packaging
The Computer Society Technical Committee on Data Acquisition and Control is an applications-oriented group addressing itself to the hardware and software techniques of process and operator interfacing for on-line computer systems. These activities are related to computer systems in process control, computer-aided manufacturing, and R&D data acquisition and reduction. The committee is active in gathering and disseminating information and is participating in standards activities in these areas.
CIRCLE READER SERVICE NO. 503

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CIRCLE READER SERVICE NO. 503

Data Base Engineering
The emphasis and scope of the technical areas include data structures and models, access strategies, access control techniques, data security and protection, design and implementation of data base software, data base related languages including data description languages and data manipulation languages, intelligent front ends, data base utilities, data translation techniques, distributed data base problems and techniques, data base management and restart, data base restructuring, adaptive data structures, concurrent access techniques, data base architecture, data base machines, mass storage for very large data bases, performance and evaluation, and related subjects such as privacy, economic, and educational issues.
CIRCLE READER SERVICE NO. 504

Design Automation
The Design Automation Technical Committee is concerned with the use of computer-oriented techniques to detect, locate, and correct at the design point, with particular emphasis on the design of electronic logic products. This includes such topics as design languages, logic synthesis, verification techniques including digital simulation, physical design (partitioning, placement, wire routing, etc.), test pattern generation, fault simulation, manufacturing interface data, graphics, data base management, etc.
CIRCLE READER SERVICE NO. 505

Fault-Tolerant Computing
The Technical Committee on Fault-Tolerant Computing is concerned with theoretical and practical aspects of the design, analysis, diagnosis, and verification of computing systems that are subject to faults. Major areas of technical interest include 1) the design and analysis of computers which are able to execute specified algorithms correctly in the presence of hardware and software faults; 2) the testing and verification of the initial correctness of hardware and software systems; 3) the design and implementation of on-line fault-detection, fault-location, and system reconfiguration procedures that can be used to recover from hardware and software faults, to perform system maintenance, and to maintain security; and 4) the development of models, measures, and techniques for evaluating the reliability, availability, and, in general, the effectiveness of fault-tolerant computing systems.
CIRCLE READER SERVICE NO. 507

Machine Intelligence and Pattern Analysis
The scope includes theoretical research, methodology, implementations, systems organization, and technology concerned with artificial intelligence and the processing of visual and time signal information. Some examples of specific topics are pictorial pattern recognition, image processing, pattern classification, feature extraction and selection, scene analysis, speech recognition and understanding, theorem proving, heuristic programming, and statistical and linguistic methods.
CIRCLE READER SERVICE NO. 508

Mass Storage
The technical committee is concerned with both the technology and the design of all aspects of computer mass storage. It focuses on those technologies which are candidates for capacities of 10^10 bits and above. Additionally, it considers technologies for smaller capacities in order to understand their influence on the mass store. In addition to technologies, the committee pursues methods for the design and evaluation of configurations of devices required to perform assigned storage hierarchy functions. Practical considerations, such as user economics, conversion, and installation management, will also be concerns of this committee.
CIRCLE READER SERVICE NO. 509

Mathematical Foundations of Computing
The committee discusses related to the mathematics underlying the power, complexity, and design of computing devices, algorithms, and programs. Current interests include the disciplines of automata theory, formal language theory, switching theory, computability theory, complexity theory, and theory of algorithms.
CIRCLE READER SERVICE NO. 510

Microprogramming
The scope of TC-Micro covers all aspects of microprogramming and its support tools. Particular attention is paid to microprogramming languages, computer architectures for microprogram implementation, emulation, microprogram design tools, design automation aids, simulators, microprogram development methodologies, control storage technologies, and applications for microprograms.
CIRCLE READER SERVICE NO. 511

Mini-Micro Computers
The purpose of this committee is the application, design, and implementation of minicomputer and microcomputer systems. The basic engineering foundations of the design of systems and new innovative applications involving modular design, data bus structures, distributed architectures, and other new concepts are addressed. The range of commercial and military applications from washing machines and automobiles to real-time distributed processing are the concern of this committee.
CIRCLE READER SERVICE NO. 512

Oceanic Engineering and Technology
Technical areas include utilization and application of all aspects of computers and computer technology to ocean-related matters. Special emphasis is given to the future role of computers, computer programs, models, simulation, data bases, data processing, signal processing, and application of computer technology to ocean-related systems. The range of interest covers all aspects of the ocean including environmental, ecological, and biological concerns; food and drugs; minerals and energy sources (oil, gas, waves, tides, etc.); navigation, transportation, and exploration vehicles; platforms (fixed, mobile, floating); habitation and life support; recreation; defense; and coastal and harbor concerns (erosion, pollution, etc.). An area of special interest is the use of satellites and other data sources related to ocean matters.
CIRCLE READER SERVICE NO. 513

Operating Systems
The Technical Committee on Operating Systems is concerned with theoretical and practical aspects of operating systems design. The committee is interested in such areas as operating system organization, resource allocation policies, measurements, performance evaluation, and system reliability (system verification, system testing, error detection, and error recovery). Also included is modeling of operating systems and languages for systems implementation. The committee hopes to stimulate research on important problems and to speed the dissemination of research results. It attempts to encourage interaction among workers in research, industry, education, and related fields.
CIRCLE READER SERVICE NO. 514

Simulation
The Simulation Technical Committee is the focal point for the promotion and dissemination of all aspects of research, development, and applications of both analog and digital computer simulation. This covers the range of simulation techniques, languages, application characterization, and analysis in applying computers to exercising application purposes for devising, testing, and improving solutions to various problems.
CIRCLE READER SERVICE NO. 515

Software Engineering
Software engineering seeks to apply engineering methods and principles to the development of computer software, and to synthesize better design and construction techniques for practical situations beyond present theory. Problems of concern involve specification of software system capabilities, modular design and algorithm selection, programmer productivity and project management, supporting software tools, testing and verification strategies, maintenance and standardization of software components. Developments within the scope of software engineering include:
1. Symbolic and mathematical specification systems.
2. Simulation and design evaluation models for software systems.
3. Performance and tradeoff studies of algorithms, and resulting application guidelines.
4. Programmer tools, including debugging aids, test data generators, program verification systems, etc.
5. New concepts in software architecture and automatic programming.
6. Empirical assessments of major project management techniques, and design approaches.
CIRCLE READER SERVICE NO. 516