CALL FOR PAPERS
1972 International Symposium on Fault Tolerant Computing
Boston, Massachusetts, June 19-21, 1972
Sponsored by the Technical Committee on Fault-Tolerant Computing of the IEEE Computer Society, in cooperation with the MIT C.S. Draper Laboratory.

At the close of the highly successful 1971 International Symposium on Fault-Tolerant Computing, held in Pasadena, California, in March, 1971, the sponsoring Technical Committee on Fault-Tolerant Computing of the IEEE Computer Society initiated plans to conduct similar Symposia in succeeding years. The 1972 Symposium will be held in the Boston area on the 19th, 20th and 21st of June, 1972.

Though the first Symposium went far to establish the current state of the art, it is expected that some other work which could not be presented there owing to incomplete preparation or limitations of time will be presented at the 1972 Symposium. Other submissions will reflect responses to the earlier papers and progress in the state of the art.

Papers are solicited in the following areas:
- Fault-Tolerant System Architecture and Design
- Testing, Fault Location, Diagnosis, and Recovery
- Applications of Error Coding Techniques
- Mathematical Modeling of Fault-Tolerant Computers
- Fault-Tolerant System Design
- Error Control in Computer Networks
- Graceful Degradation of Multiprocessor Systems
- System Programs for Testing and Diagnosis
- Operating Systems for Fault-Tolerant Computers
- Hardware and Software Aspects of Software Reliability
- Redundancy Methods in Logic Design
- Current Fault-Tolerant Computing Practice

Prospective authors are asked to notify the Program Chairman before November 1, 1971, of their intention to submit a paper. The Program Chairman is: Professor Gernot Metze, Coordinated Science Laboratory, University of Illinois, Urbana, Illinois 61801.

Papers of digest length (2,000 to 4,000 words) are to be submitted for review by December 1, 1971. Each paper is to be accompanied by a statement (not to exceed 500 words) explaining the problem approached and the nature of the contribution.

Detailed instructions will be mailed to authors at appropriate times. Each author whose paper is accepted will prepare a typed master of his submitted paper for inclusion in a Digest to be distributed at the Symposium. Expanded versions of the accepted papers may be submitted at the time of the Symposium to be considered for publication in the IEEE Computer Transactions, possibly in a special issue.

The Symposium Chairman is Prof. Albert L. Hopkins, Jr., of the MIT Aeronautics and Astronautics Department and the C.S. Draper Laboratory. The members of the Program Committee are: Prof. Gernot Metze, University of Illinois, Chairman; Prof. Algirdas Avizienis, UCLA and the Jet Propulsion Laboratory; Dr. William Carter, IBM Research Center; Dr. Herbert Chang, Bell Telephone Laboratories; Prof. Harvey Garner, Moore School of Engineering; Mr. Jack Goldberg, Stanford Research Institute; Prof. Alan Green, MIT C.S. Draper Laboratory; Dr. James King, IBM Research Center; Prof. Donald Schertz, Bradley University; Prof. C. Srinivasan, Rutgers University; Prof. Alfred Susskind, Lehigh University; Prof. Stephen Syygenda, Southern Methodist University; and Mr. Paul Wood, Honeywell Information Science Center.

A CONFERENCE REPORT
1970 National Electronics Conference

Two Midwest Area Committee-sponsored sessions were held at the 1970 National Electronics Conference in Chicago:

Design Languages for Digital Computers
Organized by J. T. Beckett, BTL
1. Microprogramming by Computer Design Language by O. R. Pardo, University of Maryland
2. DDLSIM — A Digital Design Language by L. R. Arndt and D. L. Dietmeyer, University of Wisconsin
4. The Design of a Design Language by C. H. Liu and T. D. Friedman, IBM

The first paper described the use of Chu's Computer Design Language (CDL) to write a microprogram and simulate it before implementing it in hardware. The particular example given was a microprogram used to translate relocatable code into absolute code.

The second paper described the prototype of a simulator which was written for the DDL design language developed at the University of Wisconsin. The simulator runs in two phases. The first is a "compile" phase which checks the syntax and creates and initializes tables. The second phase actually sequences the machine through each of its states.

The third paper proposed a design language: (1) with emphasis placed on what the language should do and "not on the pleasant syntactic properties," (2) which is directed toward experimenting with future design schemes, (3) which prevents uncontrollable design situations from arising, and (4) which closely follows the methodology of designers — which is modular, where each module can operate independently but where the modules can interact with one another. In the process of translating the specification to an actual design, the author claimed that a requirement should be that the final design be completely diagnosable.

The last paper presented a set of guidelines which should be used in the generation of a design language. The major points covered were that the design language should: (1) be simple and convenient to use, (2) be useable for a wide variety of applications, (3) permit both sequential and nonsequential descriptions, (4) permit the user to specify special circuit types in a high level language, (5) permit use of register transfer statement where the user can define the type of transfer, (6) permit specification of both parallel and sequential operations, (7) represent repeated structures, and (8) permit the user to communicate with a design automation system regarding placement, clustering, or partitioning.

Small Computers Used for Control in a Laboratory Environment — organized by C. G. Maple, Iowa State University
1. System Design Considerations for Computer Data Acquisition and Control in a Laboratory Environment by R. H. Vanderhoof, Argonne National Laboratory
2. Computer Control of Multiple, Independent Experiments by R. M. Stewart and J. H. Campbell, Iowa State University
3. Computer Controlled Memory Test Processor by J. G. Calderone, G. D. Kraft, and S. F. Sampson, BTL
4. A Computer Controlled Circuit Module Test Facility by R. M. Gagliardi and S. F. Sampson, BTL
5. An Advanced Data Handling System for Environmental Testing of Satellites by P. E. Muller, McDonnell Douglas

The first paper in this presentation covered systems design considerations and presented a variable spectrum of al-
ternatives associated with the implementation of a data collection and/or control system in a laboratory environment. It was pointed out that for optimum efficiency of the system to obtain the appropriate balance of hardware and software, the initial problem should be analyzed according to a variety of characteristics including the nature of the experiment, type of use of the system, storage hierarchy, communication compatibility, flexibility and display and implementation.

The second paper reported on an existing system in which a number of independent experiments are controlled by the same computer system. The emphasis of this paper is on the scope of the problem and the development of a set of specifications for both hardware and software. This computer system is a multiprocessor system which currently handles direct control, data validation and data logging concurrently for seven experiments.

The third paper was concerned with a computer controlled memory test processor which was developed to exercise both core and disk memories. Both the architecture and design were presented. A novel feature of this system is that it can operate in various modular modes. Each mode increases the level of control to permit examination of additional features of a memory system. This hierarchy of control is described from both a functional and implementation standpoint.

The fourth paper dealt with a computer controlled circuit module test facility which was designed to perform DC parametric high speed logic and nanosecond pulse tests. The unique feature of the facility is that all three types of tests can be performed on any circuit package with a maximum of 80 pins utilizing a novel test feature. The system is sufficiently flexible to be adapted to other test applications.

The last paper on an advanced data handling system for environmental testing of satellites was not presented but does appear in the proceedings of NEC. This paper considers the wide range of experimenter needs, the operational requirements, and the geographical location of the laboratory. The system is described in detail from the nature of the sensing elements to the output devices. An account is given of the system’s performance and of the methods of determining the system’s accuracy.

The complete papers are published in The Proceedings of the National Electronics Conference, 1970, Vol. XXVI.

B. E. Briley

IEEE Computer Society Workshop

Computer Networks

West Coast Committee

Lake Arrowhead, California

September 8-10, 1971

Co-Chairmen: David J. Farber — University of California, Irvine; Stephen D. Crocker — ARPA/IPT.

The number of networks has grown to the point where not all participants are familiar with each other; more networks are under development. This workshop is intended especially for those manufacturers, users and researchers who have just entered, or are about to enter, the network field.

Presentations are invited on all aspects of computer networks, particularly including user communities, inter-node protocols, terminal and switching equipments, and communications technology. Presentations on embryonic systems are especially invited.

Tentative Agenda

Session I and II — Description of Specific Systems

Presentation of specific systems with emphasis on such topics as the aim of the system and scope; the constraints applied by the application; the equipment used; protocols; expected lifetime; etc.

Session III — Functional Capabilities

Alan Weis — IBM Research

This session will discuss such topics as file transmission, the referencing of foreign data sets, remote job entry protocols, resource control, data standards, etc.

Session IV — Limitations of Hardware and Software Systems for Networks

Al Irvine — NCR

Multiplexers, terminals, software systems and hardware design will be among the topics discussed at this session.

Panel Session — Network Management Problems

Einar Stefferud — Consultant

Participation in the workshop will be by invitation from the program committee and will be limited to 65 persons, in order to facilitate discussion. To encourage free discussion of tentative conclusions, no workshop proceedings will be published. The workshop should stimulate generation of high quality papers for subsequent publications.

Should you desire to participate in this workshop, please return the attached questionnaire to the program committee prior to July 20, 1971. Be sure to arrange any release required by your organization. A registration fee of $45 includes meals and housing.

Invitations will be mailed to selected participants approximately August 15, 1971. Whether or not you plan to participate, please call this announcement to the attention of qualified colleagues who have been omitted from the mailing.

For further information as either a presenter or as a participant please contact: Prof. David J. Farber, University of California, Information and Computer Science Department, Irvine, California 92664, (714) 833-6891 or Steve Crocker, Advanced Research Projects Agency, Room 730, 1400 Wilson Blvd., Arlington, Virginia 22209.

Workshop on Modular Computer Systems

The Technical Committee on Computer Architecture and the Midwest Area Committee of the IEEE Computer Society are co-sponsoring a Workshop on Modular Computer Systems. The workshop will be held in St. Louis, Missouri, on December 2, 3, 1971.

The scope of the Workshop will include:

1. Descriptions of specific modular computer systems
2. Definitions and levels of modularity
3. Interaction of modular systems and computer networks
4. Implications on programming, users, manufacturers, etc.

Persons interested in attending should send a research summary and abstract of their proposed presentation to:

Robert A. Ellis
Computer Systems Laboratory
Washington University
724 S. Euclid Avenue
St. Louis, Missouri 63110
(314) 361-7356

Amdahl to Address Microprogrammers

Conference co-chairman W. M. McKeeman recently announced that Dr. Gene M. Amdahl will be the banquet speaker at the Fourth Annual Workshop on Microprogramming. Dr. Amdahl is well known for his far-ranging work in computer architecture, and was one of the principal architects of IBM System/360.

The Workshop is sponsored by the ACM Special Interest Group on Microprogramming and the IEEE Computer Society. It will be held September 13 and 14 at Crown College, University of California at Santa Cruz. Crown College is a small residential college set in a redwood forest overlooking Monterey Bay, and workshop participants will live and eat at the college. The registration fees of $70 for members of the sponsoring societies, $80 for non-members, and $50 for students include board, room, and preprints of the formal papers.

Although a number of formal papers
will be presented, main emphasis at the Workshop will be on many small, informal discussion groups. Attendance will be by invitation. To receive a request for invitation, or for further information, write: Dr. Paul J. Friedl, Registrar, IBM Scientific Center, 2670 Hanover Street, Palo Alto, Calif. 94304.

Computer Science and Statistics

Fifth Annual Symposium on the Interface, November 1 and 2, 1971

A two-day meeting will be held at Stillwater, Oklahoma, open to all those who are interested in the relationships between computer science and statistics. The keynote speaker will be H. O. Hartley of Texas A&M University. Concurrent workshops will be conducted in five areas:

Time Series and Stochastic Processes:
- Emanuel Parzen, State University of New York, Buffalo, Chairman

Decision Sciences:
- Dennis Grawoig, Georgia State University, Atlanta, Chairman

Compumetrics:
- Robert Gordon, University of California, Irvine, Chairman

Computer Science and Statistics in Higher Education:
- J. L. Folks, Oklahoma State University and Ron Mehr, University of Oklahoma, Co-Chairman

Computer Science and Statistics in the Extractive Industries: Dr. Julius Aronofsky, University Computing Corporation, Chairman

The conference is being co-sponsored by Oklahoma State University, the University of Oklahoma, North Texas State University, and the University of Tulsa, and by certain industrial firms in both the Oklahoma and north Texas areas. Persons who may wish to receive more information or who have contributed papers should send their inquiries to the conference chairman, Dr. Mitchell O. Locks, Oklahoma State University, Stillwater, Oklahoma 74074. Proceedings will be published.

Conference on Major Systems

Appointment of a steering committee for the first Joint National Conference on Major Systems — called to focus attention on the uses of technology in meeting the challenges of large, complex, interacting systems in the 1970’s — was announced by Gerhard L. Hollander, general chairman.

The conference which will be held October 25-29, 1971 at the Disneyland Hotel, Anaheim, California, has selected David H. Weir of Systems Technology, Inc. as IEEE vice chairman, and Dr. David E. Debeau of TRW, Inc. as ORSA vice chairman. Dr. Allen R. Stueber of the University of California at Irvine, was appointed Joint Activities vice chairman.

The Conference is co-sponsored by the Systems, Man and Cybernetics Group of The Institute of Electrical and Electronics Engineers (IEEE), and the Operations Research Society of America (ORSA).

CALL FOR PAPERS

'71 IEEE Int'l Electron Devices Meeting

October 14-16, Las Vegas Hilton Hotel, Las Vegas, Nevada. The annual meeting of the Electron Devices Group will cover research, development, design, and manufacture of integrated electronics; solid state devices; imaging and display devices; quantum electronic devices; and electron tubes. Abstracts are due July 15th to: H. Dean Toombs, Program Chairman. '71 IEDM, Texas Instruments Inc., P.O. Box 5012 — MS 922, Dallas, Texas 75222.

ACM Conference on Proving Assertions About Programs

January 6-7, 1972, New Mexico State University, Las Cruces, N.M. The ACM Special Interest Groups on Programming Languages and Automata and Computability Theory are jointly sponsoring this conference which will include topics such as design of languages to facilitate proofs, relationship of formal language definition to proofs of assertion, equivalence to problems of logic, implications of undecidability results, and proof methods based on induction. Three copies of detailed abstract or a brief abstract and an initial draft are due July 30 to R. H. Stark, Computer Science Dept., New Mexico State University, Las Cruces, N.M. 88001. Contributed papers should be based on original research.

Fifth Hawaii Int'l Conference on System Sciences and a special subconference on Computers in Biomedicine

January 11-13, 1972, University of Hawaii, Honolulu, Hawaii. This conference is devoted to advances in information and system sciences encompassing areas such as, information sciences, computer sciences, communication theory, control theory and system theory. The subconference on Computers in Biomedicine will have tutorial sessions and sessions on health care delivery systems including acute and chronic patient monitoring and diagnosis, multilevel screening and laboratory procedures. Three copies of a one page abstract must be submitted by Sept. 1, 1971 to HICSS-5, Information Sciences Program, 2565 The Mall, University of Hawaii, Honolulu, Hawaii 96822.

72 San Diego Biomedical Symposium

February 2-4, Sheraton Hotel, Harbor Island, San Diego, Calif. The symposium theme is "Innovation in Biomedicine." A few of the topics to be covered are diagnostic scanning techniques, image processing, multivariate predictions, trauma care and resuscitation, nuclear medicine, information processing in radiology, computational aids to clinical care, automated interpretation of diagnostic procedures, drug evaluation and follow-up, mathematical and logical models, hyperbaric medicine, pattern recognition and interpretation, simulation, medical application of holography, cybernetics, and hospital and medical information engineering. Abstracts of 250 words or less should be submitted by September 1 to Dr. Richard Yoder, President, San Diego Biomedical Symposium, P.O. Box 3548, San Diego, Calif. 92103.

72 Tenth IEEE Region III Conference

April 10-12, 1972, University of Tennessee, Knoxville, Tennessee. Quality papers, both tutorial and state of the art of electrical engineering in theory and practice are invited. Typical topics of interest are: power systems, biomedical, digital signal processing, instrumentation, systems engineering, computer applications, continuing education, environmental engineering control systems, social factors in technology, lasers and plasma. Three copies of one 500 word summary and a 50 word abstract are due October 20 to: Walter L. Green, Technical Program Chairman, EE Dept., University of Tennessee, Knoxville, Tenn. 37916.

72 Int'l Conference on Speech Communication and Processing

April 24-26, Boston, Massachusetts. The IEEE Group on Audio and Electroacoustics and the Air Force Cambridge Research Laboratories are sponsoring this conference to exchange information on new experiments and concepts in speech processing relating to communication, synthesis, aids for the handicapped, pattern recognition problems, and quality and intelligibility measurements. The conference is directed to all members of the technical community engaged in research, development and evaluation of speech processing techniques. Abstracts of 100 words are due November 1 to: Charles Teacher, Technical Program Chairman, Philco-Ford Corp., 3900 Welsh Rd., Willow Grove, Pa. 19090.