November 5: Tutorial; November 6–8, 1979: Conference

Compsac 79
The Palmer House/Chicago, Illinois

The IEEE Computer Society's Third International Computer Software & Applications Conference

General Chairperson: William B. Smith
Bell Telephone Labs

Technical Program Chairperson: King-sun Fu
Purdue University

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C. V. Ramamoorthy
University of California, Berkeley

Leon Stucki
Boeing Computer Services

Stephen S. Yau
Northwestern University
SOFTWARE DESIGN STRATEGIES

COURSE OUTLINE:
Several major software design methodologies will be developed and compared during this tutorial. Learning exercises will enable participants to gain a working knowledge of the techniques presented. Current project management philosophies and program design tools will be introduced.

- Overview: program structuring, the development process, software design tools.
- Structural analysis: code, module and system level concepts.
- Structured design methodologies: functional decomposition, data flow design, data structure design.
- Managing the design process, software development tools.
- Examples and exercises.

LECTURERS:
Glenn D. Bergland is head of the Digital Switching Systems Research Department at Bell Telephone Laboratories in Murray Hill, New Jersey. His principal research areas are software design methodologies, digital telecommunications services, personal computing, and nonstop computer systems. He holds a doctorate in electrical engineering from Iowa State University. Since joining Bell Laboratories in 1966, Dr. Bergland has conducted research in highly parallel computer architectures and has headed the Software Systems Department involved in feature development for the Number 1 Electronic Switching System.

Ronald D. Gordon is a member of the technical staff at Bell Telephone Laboratories in the Digital Switching Systems Research Department. His research interests are in the areas of software systems design and analysis. He holds a doctorate in computer sciences from Purdue University. Previously, Dr. Gordon was a member of the computer science faculty at Purdue University where he conducted research in program clarity and worked with Dr. Halstead in the field of software science.

DISTRIBUTED DATA-BASE MANAGEMENT

COURSE OUTLINE:
This tutorial will provide a survey of the latest technology and approaches to various aspects of distributed data-base management.

- Overview of relational data-base management systems: a brief review of basic data-base management systems concepts.
- Overview of distributed data-base management: a survey of commercial implementations and R&D results, including techniques for distributed data-base system design and implementation.
- Approaches to distributed query processing: emphasizing the problems of efficiently executing queries which access data on multiple remotely located computers.
- Approaches to distributed concurrency control: dealing with the issues of synchronizing the activities of multiple updaters accessing the same distributed data base.
- Approaches to distributed data-base reliability: dealing with the problem of correct system operations in the presence of failures of computer components in the distributed data-base system.

LECTURERS:
James R. Rothnie, Jr. is vice president and manager of the Sponsored Research Division of Computer Corporation of America. He received his BS in 1970 and his PhD in 1972, both from MIT. His primary research interests are data-base management and computer networks.

Philip A. Bernstein is assistant professor of computer science at Harvard and a senior computer scientist at Computer Corporation of America. He received his BS from Cornell in 1971 and his PhD from the University of Toronto in 1975, both in computer science. His primary research interests are data-base management and operating systems.

David W. Shipman is a senior computer scientist at Computer Corporation of America. He is among the principal designers of SDD-1, a system for distributed data bases. He is active in the areas of distributed concurrency control and resiliency mechanisms for distributed systems. He is a graduate of MIT.

SOFTWARE TOOLS

COURSE OUTLINE:
This tutorial describes state-of-the-art commercial and R&D tools for all phases of software engineering, and is intended for both managers and technical people.

The software life-cycle is divided into five phases: requirements/specification, design, implementation (production), quality assurance (testing), and maintenance. In addition, tools for software project management are also discussed.

- Philosophy of automation: motivating forces, general principles overview of software engineering methodologies and associated tools.
- Tools for specifications/requirements: analysis tools, synthesis tools, manual and semi-automated methodologies, contemporary tools.
- Tools for software design: principles of design, modes of design assistance, limitations of tools, purchase guidelines, contemporary tools.
- Tools for program implementation: principles of programming, debugging concepts, contemporary tools.

LECTURER:
Edward F. Miller, Jr. is technical director of Software Research Associates, a software engineering technology firm located in San Francisco, California. He was previously director of the Software Technology Center, Science Applications, San Francisco, and director of the Program Validation Project at General Research, Santa Barbara. Dr. Miller has extensive experience in the software area and in particular in the sub-technology of automated tool production and design. He holds a PhD from the University of Maryland, where he also was an instructor from 1964 to 1968.
Tuesday, November 6, 1979

8:30 am–10:00 am OPENING SESSION

Welcome and Introduction
William B. Smith, General Chairperson

Address and Award Presentation
Tse-yun Feng, President of IEEE Computer Society

Address by President of IEEE
Jerome J. Suran

Keynote Address
Ruth Davie, Deputy Undersecretary of Defense

10:30 am–Noon TECHNICAL KEYNOTE SESSION

Overview of the Technical Program
King-sun Fu, Technical Program Committee Chairperson

The Evolution of Software Engineering
Victor A. Vysotsky, Bell Telephone Labs

Biomedical Computing: Perspectives and Prospects
Judith M. S. Prewitt, National Institutes of Health

1:30 pm–3:00 pm

SESSION 1: SOFTWARE DEVELOPMENT METHODOLOGY

Chairperson: R. E. Merwin, George Washington University

SOFTWARE DEVELOPMENT: A FAILURE AND A SUCCESS — C. L. McClure; C. L. McClure Associates, Inc.
AN ANALYSIS OF THE PERFORMANCE OF SOFTWARE DEVELOPMENT METHODOLOGY — L. D. Lattanzi; GTE Automatic Electric Labs.

EFFECTIVE COMPUTER PROGRAM DEVELOPMENT AND USE — H. P. Rechter; Bechtel National

A METHODOLOGY FOR THE DEVELOPMENT OF RELIABLE SYNCHRONIZATION SOFTWARE — M. S. Laventhal; Hewlett-Packard

SESSION 2: STORAGE STRUCTURE AND FILE DESIGN

Chairperson: U. Gupta, Northwestern University

AN AVL ALGORITHM FOR SECONDARY MEMORY — W. E. Wright; Southern Illinois University

A RELATIONAL DBMS CONFORMING TO AN ARCHITECTURE WHICH INCORPORATES A PHYSICAL STORAGE LANGUAGE AND A PHYSICAL NAVIGATION LANGUAGE — B. A. Dutton, C. H. Chen and J. R. Driscoll; University of Central Florida

EXTENDED K-d TREE DATA-BASE ORGANIZATION: A DYNAMIC MULTI-ATTRIBUTE CLUSTERING METHOD — J. M. Chang; Bell Telephone Labs and K. S. Fu; Purdue University

LANGUAGE FILES AND DATA BASES: TWO I/O SYSTEMS OR ONE? — J. D. Lawrence; University of California, Berkeley; H. R. Johnson and J. A. Larson; Sperry Univac

SESSION 3: PATTERN RECOGNITION SOFTWARE

Chairperson: Y. T. Chien, University of Connecticut

TASK-DRIVEN IMAGE UNDERSTANDING: LISP PROGRAMMING FOR VISION RESEARCH — S. L. Tanimoto; University of Washington

SOME NEW ALGORITHMS AND SOFTWARE IMPLEMENTATION METHODS FOR PATTERN RECOGNITION — G. Toussaint and R. Paulsen; McGill University.

MANAGEMENT OF COMPUTER IMAGES USING A RELATIONAL DATA BASE — E. Hall and J. J. Hwang; University of Tennessee

STATISTICAL IMAGE PROCESSING AND RECOGNITION — C. H. Chen; Southeastern Massachusetts University

SESSION 4: TELECOMMUNICATIONS SOFTWARE

Chairperson: J. B. Romano, GTE Sylvania

REFLECTION ON THE IMPLEMENTATION OF A COMMUNICATION NETWORK PROCESSOR — T. L. C. Chen; Sperry Univac

FUNCTIONAL MULTIPROCESSING IN AN EXPERIMENTAL DIGITAL SWITCHING OFFICE — R. C. Cheng and W. A. Montgomery; Bell Telephone Labs

A MICROPROCESSOR LINE CONCENTRATION SYSTEM — J. B. Pace; Schlumberger Well Services and O. G. Johnson; IBM

DEVELOPMENT OF ELECTRONIC TANDEM SERVICE FEATURES FOR THE DIMENSION PXB — A. M. Gernish and D. C. Opferman; Bell Telephone Labs

SESSION 5: SCIENTIFIC AND STATISTICAL COMPUTING

Chairperson: J. M. S. Prewitt, National Institutes of Health

Panelists: W. G. Steward, University of Maryland; G. I. Fix, Carnegie-Mellon University; J. E. George, Los Alamos Scientific Lab.; T. Boardman, Colorado State University; M. E. Tarter, University of California, Berkeley

3:30 pm–5:00 pm

SESSION 6: SOFTWARE REQUIREMENTS AND SPECIFICATIONS

Chairperson: C. R. Vick, U.S. Army BMDATC

A SEMANTIC-BASED REQUIREMENTS AND DESIGN METHOD — M. L. Wilson; IBM

REPRESENTATION OF DECISIONS IN A REQUIREMENTS SPECIFICATION LANGUAGE — A. P. Conn; University of Maryland

SPECIFICATION OF SYSTEM REQUIREMENTS: FUNCTIONS, TIME, AND MONEY — P. Zave; University of Maryland

AN APPROACH TO ABSTRACT SPECIFICATION BASED ON TRACES — D. Chester; University of Texas, Austin

AN APPROACH FOR CHOOSING A PROGRAMMING SPECIFICATION METHODOLOGY — P. Teiplitzky; Peat, Marwick, Mitchell & Company

SESSION 7: SCHEMA AND VIEW DESIGN

Chairperson: T. L. Kunii, University of Tokyo, Japan

THE UNIVERSAL RELATION ASSUMPTION AND DECOMPOSITION STRATEGIES FOR SCHEMA DESIGN — W. L. Gewirtz; Bell Telephone Labs

A DATA-BASE DESIGN SYSTEM WITH CONCEPTUAL MODEL DESCRIPTION LANGUAGE — M. Manakagi and K. Kawago; Nippon Electric Co.

DPLAN: A DATA-BASE-ORIENTED PROGRAMMING LANGUAGE — A. B. Whinston, M. Googe, and R. Bonczek; Purdue University

A SIMILARITY-DIRECTED DATA-BASE MANAGEMENT SYSTEM FOR IMAGE PATTERN ANALYSIS — Y. T. Chien and M. Ward; Univ. of Connecticut

RECONSTRUCTION AND DISPLAY OF THREE DIMENSIONAL IMAGES FROM SERIAL SECTIONS: GEOMETRIC THEORY FOR DATA STRUCTURE AND SOFTWARE — J. S. Todhunter and C. C. Li; University of Pittsburgh

SESSION 8: PATTERN RECOGNITION SOFTWARE II

Chairperson: C. H. Chen, Southeastern Massachusetts University

MATHEMATICAL ASPECTS OF OPTIMAL LINEAR DISCRIMINANT FUNCTIONS — A. Miyake; Nihon Medical School, Japan

LINEAR DISCRIMINANT FUNCTIONS FOR MINIMUM-ERROR PATTERN RECOGNITION: A DIRECT APPROACH — R. E. Warmack; Amoco Production Company and R. C. Gonzalez; University of Tennessee

OPTIMAL LINEAR DISCRIMINANT FUNCTIONS AND ITS APPLICATION — S. Shimnura; Sumisho Computer Services Corporation, Japan

ERROR ANALYSIS OF RECURSIVE DIGITAL FILTERS IMPLEMENTED WITH LOGARITHMIC NUMBER SYSTEMS — T. Kurokawa, J. A. Payne and S. C. Lee; University of Oklahoma

SESSION 9: TELECOMMUNICATIONS SOFTWARE II

Chairperson: R. J. Hass, Bell Telephone Labs

WHAT'S DIFFERENT ABOUT OPERATING SYSTEMS FOR TELEPHONE SWITCHING? — W. H. Hueb; Bell Telephone Labs

SOFTWARE ENGINEERING IN A REAL-TIME APPLICATION — C. Funnicut and S. H. Tsang; Bell Telephone Labs

PROTEL: A HIGH-LEVEL LANGUAGE FOR TELEPHONE — M. L. Jollie, D. G. Foxall, R. F. Kamel and J. J. Miceli; Bell Northern Research

PROCESS MANAGEMENT IN A PAGING MACHINE — K. V. Sastry; Sperry Univac

Tuesday Evening, 5:15–7:00 pm COCKTAILS

Wednesday, November 7, 1979

8:30 am–10:00 am

SESSION 10: SOFTWARE REQUIREMENTS, I

Chairperson: C. Davis, U.S. Army BMDATC

A THEORY TOWARD FORMAL REQUIREMENTS — W. Wymore; University of Arizona

TOWARDS FORMAL FOUNDATIONS FOR THE MICHAEL JACKSON DESIGN METHODOLOGY — M. A. Alford, TRW

DEVELOPMENT OF A UNIFIED APPROACH FOR SYSTEMS REQUIREMENTS ENGINEERING — R. Larson, et al.; System Control, Inc.

SYSTEMS VALIDATION THROUGH AUTOMATED REQUIREMENT VERIFICATION — D. L. Huebner; GTE Automatic Electric Labs.

SESSION 11: DATA BASE DESIGN (SOFTWARE TOOLS)

Chairperson: D. K. Hsiao, Ohio State University

A MODEL OF INTERNAL ACCESSES IN NETWORK DATA-BASE SYSTEMS — M. Schkolnick, IBM

TOWARDS SYSTEMATIC AND AUTOMATIC DATA-BASE DESIGN — L. Aguilar and D. K. Hsiao; Ohio State University

DISTRIBUTED DATA-BASE SYSTEMS: A FRAMEWORK FOR DATA-BASE DESIGN — C. Mohan; University of Texas, Austin, and R. T. Yeh; University of Maryland

A CANONICAL DATA AND PROCESS MODEL FOR DATA-BASE DESIGN — S. B. Yao and V. Waddle; Purdue University
SESSION 12: EVOLUTION OF SOFTWARE ENGINEERING TOOLS INTO THE MANUFACTURING OF PRODUCTION SYSTEMS
Chairperson: R. J. Mayer, USAF ICAM Program

SESSION 13: AUTOMATED VISUAL INSPECTION
Chairperson: J. L. Mundy, General Electric VISUAL INSPECTION AUTOMATION — J. Jarvis, Bell Telephone Labs DATA MODELS FOR AUTOMATED INSPECTION — J. L. Mundy: General Electric VISUAL PRINTED WIRING BOARD FACULTY DETECTION BY A GEOMETRIC METHOD — L. Drakauer and T. Pavlidis: Princeton University

SESSION 14: COMPUTER-BASED DIAGNOSTIC AND THERAPEUTIC SYSTEMS
Chairperson: C. C. Li, University of Pittsburgh CONSULT IN GENERAL PRACTICE — E. A. Patrick: Purdue University APPLICATIONS OF COMPUTERS IN RADIATION THERAPY — B. Heidtman: Pfizer Medical Systems COMPUTER-CONTROLLED DYNAMIC RADIATION TREATMENT — A. C. Bin: Rush Medical Center STATUS OF A COMPUTER AIDED SYSTEM FOR CYTOGENIC ANALYSIS — M. Shaunessey, A. C. Martin: Northwestern University Medical School; M. R. Rzeszotarski, C. W. Thomas, and B. Eisenlet: Case Western Reserve University

SESSION 15: SOFTWARE REQUIREMENTS, II

SESSION 16: QUERY DESCRIPTION AND PROCESSING
Chairperson: T. Ichikawa, Hiroshima University, Japan AN ALGORITHM FOR TREE QUERY MEMBERSHIP OF A DISTRIBUTED QUERY — C. T. Yu: University of Illinois, Chicago Circle; and M. Z. Ozsoyoou: University of Alberta, Canada DESIGN AND IMPLEMENTATION OF A QUERY COMMAND LANGUAGE USING AUGMENTED TRANSITION NETWORKS — E. Gudes and P. Conley: Pennsylvania State University SEMANTICS FOR DATA RETRIEVAL DATA-BASE SYSTEMS — R. L. Kashyap and R. B. Abhyankar: Purdue University QUERY BY PICTORIAL EXAMPLE — N. S. Chang and K. S. Fu: Purdue Univ.

SESSION 17: MANUFACTURING SYSTEMS AND SOFTWARE DEVELOPMENT METHODOLOGY

SESSION 18: ROBOT VISION SYSTEMS

SESSION 19: BIOMEDICAL IMAGE PROCESSING I: COMPUTERIZED TOMOGRAPHY
Chairperson: S. J. Dwyer, Ill, University of Kansas Medical Center AN INTERACTIVE IMAGE PROCESSING SYSTEM FOR DIAGNOSIS USING THE COMPUTERIZED TOMOGRAPHIC BREAST SCANNER (CT/M) — C. H. J. Chang, W. H. Anderson, S. L. Fritz, M. A. Tarlton, S. J. Dwyer, Ill, and A. W. Templetson: University of Kansas Medical Center AN ON-LINE PROCESSING PACKAGE FOR ANALYZING COMPUTERIZED TOMOGRAPHY SCANS — H. K. Huang, P. Weiss, H. Kraft: Georgetown University Medical Center; and B. Heldman: Pfizer Medical Systems ORTHOGONAL CUBE VIEW GENERATOR FOR CT SCANNED DATA — C. H. Lee and F. P. Hsi: Syracuse University

SESSION 20: SOFTWARE DESIGN

SESSION 21: FUNCTIONAL DATA DEPENDENCIES

SESSION 22: DISTRIBUTED PROCESSING SYSTEMS, I

SESSION 23: ROBOT MANIPULATOR CONTROL LANGUAGES & SYSTEMS

SESSION 24: BIOMEDICAL IMAGE PROCESSING II: MICROSCOPY
SESSION 25: SOFTWARE TESTING
Chairperson: C. V. Ramamoorthy, University of California, Berkeley

SESSION 26: COMPUTER GRAPHICS AND PICTURE DATA BASE
Chairperson: B. Mittman, Northwestern University

SESSION 27: DISTRIBUTED PROCESSING SYSTEMS, II

SESSION 28: BIOMEDICAL IMAGE PROCESSING III: RADIOLOGY

Wednesday Evening, 5:15-7:00 pm COCKTAILS

THURSDAY, November 8, 1979

SESSION 29: SOFTWARE MANAGEMENT: APPROACHES AND EXPERIENCE
Chairperson: J. Distaso, TRW Panelists: J. B. Munson, SDC; J. H. Manley, APL, John Hopkins University; L. G. Stucki, Boeing Computer Services

SESSION 30: DATA-BASE MANAGEMENT

SESSION 31: SPECIAL SOFTWARE TECHNIQUES

SESSION 32: MICROCOMPUTER SOFTWARE

SESSION 33: BIOMEDICAL IMAGE PROCESSING IV: NUCLEAR MEDICINE

10:30 am–Noon

SESSION 34: IMPLEMENTING A SOFTWARE MANAGEMENT DISCIPLINE

SESSION 35: ROLES OF THE DATA DICTIONARY SYSTEM

SESSION 36: SOFTWARE QUALITY

SESSION 37: OFFICE OF THE FUTURE
Chairperson: G. Kraft, III To be arranged.

SESSION 38: BIOMEDICAL IMAGE PROCESSING V: NEW ADVANCES
SESSION 38: SOME ASPECTS OF SYSTEM MANAGEMENT
Chairperson: J. Staudhammer, North Carolina State University
SOME PRACTICAL CONSIDERATIONS FOR MANAGEMENT INFORMATION SYSTEMS — H. E. Dunsmore: Purdue University
THE TECHNOLOGY OF SYSTEM MANAGEMENT — M. A. Belsky: IBM
ADAPTATION OF THE BASIC HIERARCHY FOR ENCRYPTION KEY MANAGEMENT TO SERVE APPLICATIONS WITH CONFLICTING REQUIREMENTS — J. Everton: Sperry Univac

SESSION 40: SPECIAL TOPICS IN COMPUTER SOFTWARE, I
Chairperson: L. Stucki, Boeing Computer Services
AUTOMATIC PROCESSING OF THE TOPOLOGICAL OPERATIONS LANGUAGE: A LOGIC ORIENTED APPROACH — S. Parthasarathy and P. Deschizeux; Institut Natl. Polytechnique de Grenoble, France
EVALUATION OF DRAWING FORMALIZATION IN AN ENGINEERING DATA-BASE ENVIRONMENT — A. P. Buchmann: University of Texas and J. L. Herman: University of Tokyo, Japan
AN INTERACTIVE DESIGN SYSTEM FOR ENGINEERING DRAWINGS — K. Y. Cheng: Institute of Information Science, Academic Sinica
SYNTACTIC ERRORS TREATMENT IN AN ATLAS TRANSLATOR — G. Terrevoli: Selenia S.p.A.

SESSION 41: COMPUTER-AIDED CIRCUIT LAYOUT DESIGN
Chairperson: E. S. Kuh, University of California, Berkeley
SINGLE ROW ROUTING AND ITS GENERALIZATION — E. S. Kuh: University of California, Berkeley
WIREABILITY IN VLSI DESIGN — W. R. Heller, IBM
ONE DIMENSIONAL GATE ASSIGNMENT AND INTERNAL GRAPHS — T. Ohtsuki: Nippon Electric Company
NEW ANALYTICAL RESULTS IN THE WIRE ROUTING PROBLEM — H. Sc: Bell Telephone Labs

SESSION 42: IMAGE PROCESSING, I
Chairperson: T. Pavlidis, Princeton University
A GRAPH-THEORETICAL APPROACH TO REGION DETECTION — N. Ohbo, K. Shimizu and T. L. Kunii: University of Tokyo, Japan
AN INTERSECTION CLEAN-UP TASK ON CALCOMP’S INTERACTIVE MAPPING SYSTEM — G. S. Goldman: California Computer Products, Inc.
EDGE DETECTION BY DYNAMIC PROGRAMMING — O. Tretiak and H. E. Wallingford and J. C. Culpepper: U.S. Naval Academy
RIPPLE FILTERS: A NEW REGION GROWING ALGORITHM FOR SCENE ANALYSIS — L. Reiss and D. B. Cooper: Brown University

SESSION 43: SOFTWARE DEVELOPMENT TOOLS
Chairperson: R. Fairley, Colorado State University
Panelists: J. Boyle, Argonne National Lab.; J. R. Brown, Boeing Computer Service Co.; C. A. Irvine, SofTech Microsystems, Inc.; B. Konsynski, Univ. of Arizona; W. Riddle, Univ. of Colorado

SESSION 44: HUMAN FACTORS AND SOFTWARE DESIGN
Chairperson: A. S. Kamlet, Bell Telephone Labs
Panelists: E. M. Johnson, U.S. Army Research Institute; R. F. Rosen, Bell Telephone Labs

SESSION 45: SPECIAL TOPICS IN COMPUTER SOFTWARE, II
Chairperson: D. Fife, National Bureau of Standards
AN EXPERIMENTAL EVALUATION OF DATA ABSTRACTION — R. N. Meeon and A. Pyster: General Research Corporation
APPLICATION OF PATTERN RECOGNITION TECHNIQUES TO FAULT-TOLERANT AND SOFTWARE SYSTEMS — S. D. Shapiro: Stevens Institute of Technology
THE RELATIONSHIP BETWEEN STUDENT GRADES AND SOFTWARE SCIENCE PARAMETERS — Y. Shen: Purdue University
A PERFORMANCE ANALYSIS OF SINGLE VERSUS MULTIPLE-PROCESSORS — E. Arthus and B. W. Stuck: Bell Telephone Labs, Murray Hill
EXECUTION TIME BEHAVIOR OF CERTAIN HIGH-LEVEL LANGUAGE CONSTRUCTS ON A FEEDBACK DATA FLOW ARCHITECTURE — C. Retnadhay: Western Illinois University

SESSION 46: PETRI NETS AND OTHER COMPUTATION MODELS
Chairperson: T. Murata, University of Illinois, Chicago Circle
COMPARING MODELS OF PARALLEL COMPUTATION: HOMOMORPHISM — R. E. Miller and T. Kasai: IBM T. J. Watson Research Center
PERFORMANCE EVALUATION OF CONCURRENT ASYNCHRONOUS SYSTEMS BY PETRI NETS — C. Y. Ramamoorthy and G. S. Ho: University of California, Berkeley
USING PETRI NET TRANSITION NETS TO MODEL AND ANALYZE DISTRIBUTED DATA-BASE SYSTEMS — K. Voss: GMD-ISF, F. R. Germany
SYNTHESIS OF DECISION-FREE CONCURRENT SYSTEMS WITH STORAGE CONSTRAINTS — T. Murata: University of Illinois, Chicago Circle
COMPUTER-AIDED MODELING OF INFORMATION SYSTEMS — D. Teichroew, S. H. Spewak and E. A. Hershey: University of Michigan

SESSION 47: IMAGE PROCESSING, II
Chairperson: A. Miyake, Nihon Medical School, Japan
HIERARCHICAL STRING PATTERN MATCHING USING DYNAMIC PATTERN MATCHING MACHINE — Y. Kambayashi, N. Nakatsu and S. Yajima: Kyoto University, Japan
TWO-STAGE DATA FILE COMPRESSION — P. S. Liu and T. Y. Young: University of Miami
TWO N-POINT FAST WALSH TRANSFORM SORTING ALGORITHMS — E. E. Wallingford and J. C. Gulpepper: U.S. Naval Academy
FOCUS SOFTWARE — S. C. Lee: University of Oklahoma
MORPHOLOGICAL ANALYSIS OF SIMPLIFIED CHINESE IDEOGRAPHIC GRAPHS AND A HIERUSTIC APPROACH — S. T. Bow: Academia Sinica

SESSION 48: SIMULATION CASE HISTORIES
Chairperson: N. F. Schneiderwind, Naval Postgraduate School
ANATOMY OF TWO LARGE-SCALE SIMULATION PROJECTS (EVERYTHING YOU ALWAYS WANTED TO KNOW ABOUT SOFTWARE IMPLEMENTATION AND MANAGEMENT BUT WERE AFRAID TO ASK) — J. Archdeacon and J. Cetina: Simulation Technology, Inc.
A SHINING COMPUTER SIMULATION PROJECT AFFIRMS: THE OUTLOOK FOR SOLAR CELL POWER IS BRIGHT — A. Kran, IBM
CASE STUDY OF SOFTWARE COMPLEXITY AND ERROR DETECTION SIMULATION — N. F. Schneiderwind, Naval Postgraduate School

CHILD Care AVAILABLE AT COMPSAC ’79
Again in 1979, COMPSAC will offer an activities center for children under age 10. This is not “babysitting,” but a facility staffed by early childhood educators will be offered for a nominal fee of $2.00/session/child. Childcare will be available between 8:30 a.m. and 5:30 p.m. November 6–8, 1979. Childcare will also be offered on November 5, 1979 if interest is shown. Infant care and field trips are also available if interest is shown. Don’t miss COMPSAC 79 because of a childcare problem!

THE GRAND TOUR
Tuesday, November 6, 1979, 8:30 a.m.—12:30 p.m.
Bus tour along Chicago’s Magnificent Mile and downtown Loop area, stopping at world famous Walters Tower Place for shopping at their exclusive shops. Ride by John Hancock building and stop at the Sears Tower, the world’s tallest building, for a breath-taking view from the skydeck. Travel Lake Shore Drive by Soldier Field to the Museum of Science and Industry for a brief tour of their fascinating exhibits. Cost is $8.50 per person

CANDLELIGHT DINNER PLAYHOUSE
Wednesday, November 7, 1979, 6:00 p.m.—11:00 p.m.
Travel from Palmer House to America’s first dinner theatre, the Candlelight Playhouse where you will enjoy the Pulitzer Prize-winning musical “South Pacific.” Choose from five delicious entrees for a complete evening of elegant dining and the best in live award-winning musicals. Cost is $17.95 per person

FRANK LLOYD WRIGHT ARCHITECTURAL TOUR
Thursday, November 8, 1979, 9:30 a.m.—12:30 p.m.
A stimulating tour of world famous architect Frank Lloyd Wright’s acclaimed architecture, including a walk-through guided tour of his famous home and studio. Here are 25 of his works for your viewing, including the renowned Unity Temple, an early masterpiece, and a National Historic Monument. Cost is $9.50 per person
## Advance Registration

Complete and return this form (with your check made payable to COMPSAC 79) to:

**COMPSAC 79, P. O. Box 639**  
Silver Spring, Maryland 20901  
Telephone: (301) 439-7007

(please check appropriate boxes)

| TUTORIAL 1 Software Design Strategies | $65 | $80 | $75 | $90 |
| TUTORIAL 2 Distributed Data-Base Management | 65 | 80 | 75 | 90 |
| TUTORIAL 3 Automated Software Tools | 65 | 80 | 75 | 90 |
| COMPSAC ONLY | 65 | 80 | 80 | 90 |
| TUTORIAL 1 + COMPSAC | 130 | 145 | 140 | 155 |
| TUTORIAL 2 + COMPSAC | 130 | 145 | 140 | 155 |
| TUTORIAL 3 + COMPSAC | 130 | 145 | 140 | 155 |

(per person — advance registration only)

- GRAND TOUR $8.50
- CANDLELIGHT DINNER PLAYHOUSE $17.95
- FRANK LLOYD WRIGHT ARCHITECTURE TOUR $9.50

**NOTE:**

STUDENT DISCOUNT available for COMPSAC ONLY (Fee: $25). To receive a discount, students must be IEEE student members and must show membership card at the door.

- Requests for refunds must be received in writing no later than October 22, 1979.
- TUTORIAL registration fee includes luncheon and bound text of the selected tutorial.
- COMPSAC registration fee includes one copy of the conference proceedings, and 2 complimentary drink tickets for each of the COMPSAC-hosted parties, Tuesday and Wednesday nights.
- Tour and dinner theatre tickets must be paid for in advance, along with advance registration. In event of cancellation due to insufficient ticket orders, full refunds will be made.

**Limited attendance. Register early — avoid disappointment.**

- Registration desk will be open at the Palmer House beginning Sunday evening, November 4, 1979.

**IEEE or IEEE COMPUTER SOCIETY Membership Number**

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I will need childcare for ______ children aged ______ (indicate date)

Complete and mail the reservation to:  
**The Palmer House, State and Monroe Streets**  
Chicago, Illinois 60601, Phone: (312) 726-7500

To confirm your room reservation, the Palmer House must receive this coupon by October 17, 1979. Rooms will be held no later than 6:00 pm on day of arrival unless reservation coupon is accompanied by deposit to cover first night's rental.

Please indicate the number of rooms and circle the rates desired. If the desired rate is not available, a closest rate will be given.

**The Palmer House**

- Single (1 person) $37, $40, $43
- Double or Twins $49, $52, $55
- Suite (check rates with hotel)

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**The Palmer House Tower**

- Single (1 person) $55, $60, $65, $70
- Double or Twins $69, $74, $79, $84
- Suite (check rates with hotel)

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