Arizona
Arizona is sometimes called the land of contrasts because of the changing scenery and activities that are offered. You can swim and play tennis in the morning and spend the afternoon fishing, hiking, or sightseeing in the cool pines. The living is casual and friendly, you’ll feel right at home in jeans and a western shirt—but don’t forget your best evening wear for the many elegant restaurants and cultural events offered here.

Phoenix
The Phoenix metropolitan area is the central point for visitors to Arizona. Located in the heart of the Valley of the Sun, Phoenix boasts of its many excellent sports facilities which are available without leaving the city. Valley sightseeing offers many other varied attractions including the Phoenix Zoo, the Desert Botanical Gardens, the Phoenix Art Museum, and Scottsdale with its famous Fifth Avenue shops, just to name a few.

The Hotel
The Phoenix Hilton is located in the center of downtown Phoenix, steps away from most major activities. For those flying into Phoenix, the hotel is less than 15 minutes from Sky Harbor International Airport.

In an effort to help make this conference a success the Hilton has offered PC3-’83 room rates that are not only low, but exceptional for a facility as elegant. Payment in advance is required unless prior arrangements have been made or payment to be charged by credit card. Reservations must be received by the hotel on or before April 14, 1982. To guarantee your reservation, provide your credit card number.

Entertainment
The Executive Committee has scheduled several special events. In addition, educational tours have been scheduled for Wednesday afternoon.

Keynote Luncheon
Tuesday at lunch Dr. Russell Nelson of Arizona State University will speak.

Rawhide, Arizona
On Monday evening, we have scheduled a visit to Rawhide, Arizona, an authentic Arizona 1880’s town. Our visit to Rawhide will include a real, old-fashioned western heyday and steak fry.

Conference Banquet
Tuesday evening, the PC3 Conference banquet will feature Mayor General C.E. McKnight, Jr., Commander of the U.S. Army Communications Command, speaking on “Computers and Communications—The New Challenge.

Spouse’s Program
Monday’s Tour (5 Hours)
Monday afternoons program includes a tour of the Phoenix Valley, including such interesting sites as the Wigley and McCartney mansions, and Senator Barry Goldwater’s residence. The Heard Museum, one of the Southwest’s most famous museums, was built in 1929 and brings into focus all aspects of the Southwestern’s Indian culture. It displays the world’s largest museum collection of Hopi Kachina Dolls. At the Desert Botanical Gardens, you can view the desert plant life in its natural setting, featuring more than half of the world’s 1,800 varieties of cacti, plus succulents, trees, wild flowers, and shrubs.

Tuesday’s Tour (All Day)
A trip to Sedona’s majestic Red Rock Country is planned for Tuesday’s program. A little over 100 miles north of Phoenix, the cultural community of 5,500 has become a mecca for art lovers and collectors who are drawn by more than a dozen commercial galleries featuring paintings, sculptures, and art objects.

Airline Discount
Let United Airlines jet you to Phoenix for PC3-’83. United Airlines and the Phoenix Conference on Computers and Communications have teamed together to provide a 25% discount off of full coach fare for attendees to our 1983 annual convention. Simply call the United toll-free numbers listed below and give your special account number 9304.

For Convention Flight Reservations call toll-free, 800-521-0810
In Michigan only; 800-482-0243

IMPORTANT: United’s specialists will assist you in making reservations at the most economical fare available; regardless of the point of origin. Please reserve as far in advance as possible. Once you have purchased your ticket, you will not have to pay any additional amount even if airfares are raised before your trip.

PC3 PROGRAM REGISTRATION

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Middle Initial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Title</th>
<th>Company Name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number and Street Address</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>City, State, Zip (or) City, Province/State, Country</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

Membership Information
IEEE Membership #: □ Member $145.00 □ Non-Member $200.00

Registration Fees
Late Registration: After February 16, 1983 add $5.00.

Total Program:
Sessions, record, two breakfasts, three luncheons, and the banquet
□ Member $165.00 □ Non-Member $200.00

Special Total Programs: Includes one Tutorial Session
□ Member $250.00 □ Non-Member $310.00

PC3 - ’83
P.O. Box 36486, Phoenix, Arizona 85069

Tutoral Schedule:
Monday, March 14
8:30 - 5:00 P.M.

TUTORIAL I
Technology You Need for VLSI Design and Use

Contents
This tutorial analyses the key supporting technologies needed to design and use semi-custom and full-custom VLSI arrays. SILICON: An overview of industry and silicon technology trends is included.

COMPUTER-ADDED DESIGN: An analysis of five interesting and contrasting CAD systems is presented. A flow chart method of computing the ease of use and utility of CAD systems is developed. TESTING: Testing trends and an analysis of the potential for level-sensitive scan design is given. PACKAGING: Packaging is limiting the use of VLSI so an indepth study of packaging requirements is made. The tutorial should be of immense use and interest to users and designers of VLSI arrays including system planners, system architects, logic designers, packaging engineers, test engineers, design automation programmers, and silicon chip designers.

Instructor: REX ROORDLE

TUTORIAL II
Software Engineering Environments

Contents
Modern operating systems include a variety of tools for creating and evolving software systems. Every practitioner uses them and everyone agrees that more extensive, coherent and powerful set of tools is needed. Software Engineering environments are actively being pursued as a cost effective way of meeting this need. The tutorial covers such issues as what an environment should include, how a coherent environment can be built and how an existing environment’s power and utility can be increased. Numerous examples are presented. The Joseph environment is used as a case study. Practitioners can learn about the breadth of tools that are possible and how to most effectively use what is available. Managers can learn why environments are critically important and how to cost-effectively provide them.

Instructor: BILL RIDDLE

TUTORIAL III
Digital Speech Processing: State of the Art

Contents
Voice Synthesis and Recognition are no longer the novelty features of toys and games nor the domain of the advanced Research and Development area. Voice input and output are taking the place in today’s world as an effective way to interact with computers.

This seminar focuses on the characteristics of human voice analysis techniques and current product development in the areas of synthesis and recognition. This seminar will be of particular interest to users and planners of voice, as well as voice product engineers. Systems engineers, product designers, marketing managers, and software design engineers should also become aware of the long term consequences of voice as an interface medium.

Instructor: DAVID WONG
The technical sessions for PC '83 have been divided by time and track. There will be four concurrent tracks on Tuesday and Wednesday. The tracks are then subdivided by subject and session.

The six subject areas are:

A. Computer System Architecture
B. RAS
C. Computer-Aided Processes
D. Software Theory and Application
E. Integrated Circuits
F. Software Development and Theory
G. The Human Element

Within each subject category are up to six separate sessions. The sessions are labeled similar to the following example: 2B3—the 2 refers to the track, the B refers to the subject category, and 3 refers to the session title.

Technical Sessions: Tuesday, March 15

1D1 ARTIFICIAL INTELLIGENCE
- Automatic Analysis of Strategies-A New Branch of Artificial Intelligence
- Fuzzy Value Logic (FLV)—The Human Element
- Learning Automata Possessing Ergodicity of the Mean

1D2 THE INFORMATION RESOURCE
- An Integrated Presentation Layer
- Performance of Distributed Database
- Deadlock Avoidance Algorithms
- A New Approach to Linear Distance—Preserving Dimensionality Reduction

1D3 DISTRIBUTED SYSTEMS
- A Distributed Operating System for a Local Network
- Performance Modeling of Distributed Systems
- A Priority Mechanism for Flow Control in a Multi-task Distributed System with Specific Application to Voice Data Communications Switch

1D4 APPLICATIONS AND TOOLS
- Performance Simulation of a Local Area Real-Time, Distributed Data Processing
- Computer Control of the MIM
- A Debugging Tool for Distributed Systems

2C1 APPLICATIONS TO CAM
- A Key Requirement in Computer Integrated Manufacturing
- Computer Aided C.M. Manufacturing
- Engineering Work Stations—A New Approach to Engineering

2C2 APPLICATIONS TO CAD
- A VLSI Gate Array Design System
- A Software CAD System for Repackaging and Partitioning One Circuit Technology into Another
- Speech Transcriptions—Concepts and Application

2F1 SOFTWARE MANAGEMENT
- Automated Approach Towards Life Cycle Cost Estimation
- Measures for Error Handling Effectiveness
- Development of Decision Support System to Assist in Software Release Time

2F2 REQUIREMENTS METHODOLOGY
- Selecting a Methodology for Requirements Analysis
- An Introduction to ASAP
- A Methodology for Expressing the System Requirements of a Switching System

3B1 MODELLING AND ANALYSIS (PART I)
- Reliability Comparison of N + 1 Simplex Processor vs N Duplex Processors
- A Probabilistic Reliability Analysis Of Multiprocessor Architectures
- A Combined Hardware Software Failure Model
- A Complexity Metric which Integrates Structural and Textual Metrics

3B2 MODELLING AND ANALYSIS (PART II)
- Some Recent Results in Software Reliability Modelling and Analysis
- Measuring and Managing Software Reliability
- NetRAT: A Network Reliability Analysis Tool
- Measuring Service Reliability in Computer Communications Networks

3B3 FAULT TOLERANT DESIGN
- Analysis and Implementation of System Procedures for Software Implemented Fault Tolerant Microcomputer Systems
- Development of Methods for the Systematic Design of Distributed Computer Systems
- Data Reliability in Secondary Storage

3B4 TESTING
- AUTOTESTER: A testing methodology for Interactive User Environments
- Independent Verification and Validation of Real-Time Software
- Improving Software Management Through Enhanced Testing Procedures
- Improved Software Reliability Through the Use of Functional and Structural Testing

1F3 SOFTWARE METHODOLOGIES
- Some Practical Guidelines for Software Design
- Computer-Aided Systems Analysis and Design Packages for Small Computer Systems
- An Analysis of the Software System Integration Process

1F4 TECHNIQUES FOR SYSTEM DESIGN
- Protecting Processes Through the Use of Ports
- Concurrent Systems Design using Access Graphs
- A Proposed Architecture for Software Systems

1F5 LANGUAGES
- A Guide to the Selection of Compiler Development Tools
- A Generalized Assembler Architecture: Experience in Managing Hierarchical Parsing

1F6 SOFTWARE VALIDATION/VERIFICATION
- WAF PATH: A White Box Approach to Software Integration
- An Analysis of Test Case Selection
- A System for Program Validation, Revalidation, and Debugging

2G1 THE USER INTERFACE—CRITERIA AND MEASUREMENTS
- Towards a Friendly Environment
- Software Ease of Use Metrics and Methodology
- Implications for Interface Design from Analysis of Univariate Command Usage

2G2 EXPERIMENTS IN INTERACTIVE INTERFACES
- Data Entry Displays
- Computer Display Menus
- Design Methodology for Menu Structures

2G3 EFFECT OF COMPUTERS ON PEOPLE AND ENTERPRISES
- Experiences with an Electronic Interactive Meeting Facility
- The Psychological Impact of Computer Systems on Hospital Personnel

2G4 DESIGN FOR HUMAN INTERFACE
- Eliminate the Keyboard with Touch-Sensitive CRT Screens
- Human/Machine Dialogues: Design, Test, Redesign...
- The CP-6 Input Manipulator Processor (IMP)
- A Model for a Common Video Driven Operating System (V-DOOPS)

2G5 COMPUTER SYSTEMS ARCHITECTURE
- The Missing Link
- An Efficient Conformrafted Multiple Access Scheme for Integrated Voice and Data Networks
- Multichannel Dynamic Satellite Packet Networks for Computer Databanks

3A1 MICRO BASED SYSTEM ARCHITECTURES
- Interprocessor Communication in a Tightly Coupled Multiple Processor Architecture
- Architecture of a Multiprocessing System for Switching High Volume Integrated Voice Data Traffic
- Text Editor on a Chip

3A2 SOFTWARE QUALITY ASSURANCE
- Software Quality Assurance
- A System's Approach to Software Quality Assurance
- Applying Software Quality Metrics

3A3 SYSTEM PERFORMANCE EVALUATION
- Performance Evaluation of a Distributed Burst-Switched Communications System
- Not available or in printing
- An Analytical Model for a Multiprocessor Operating System in a Transaction-oriented Computer Network

3A4 FUNCTIONALLY DISTRIBUTED ARCHITECTURES
- Computer Architecture for Maximum Parallel Processing
- A Back-end Database Processor
- The Number 4 ESS Attached Processor System

3B5 MAINTENANCE SUPPORT
- Early Warning System Abstract
- A Mini to Keep the Main Going
- Administration, Control & Maintenance Capabilities for an Integrated Telecommunications Office Automatic Systems

4C3 APPLICATIONS TO CAT
- Field Service Automation for Testing
- Maintenance Support Software for a Mainframe Support Computer
- Integrating Knowledge Information Processing Systems into Turbomachinery

4D5 LOCAL AREA NETWORKS
- Ethernet VLSI Chips
- LAN Broadband, Baseband, and Bridge Controllers
- LAN Applications in the Near
- LAN Via Packet Radio Media
- Token-Bus LAN Architecture
- Panel Discussion