



Worcester County IEEE

Newsletter

October

1996

Worcester County Section - PACE

**Get more value from your next job while saving
the Employer immediate costs**

Robert Adelson, partner, Lawson & Weitzen

October 16, 1996 at 6:30 PM, New England Electric, Westboro

A discussion on alternative forms of compensation for professionals. This is a topic that should be of interest to engineers, consultants and companies that employ such professionals.

Computer Society - Boston and Worcester IEEE Sections

I-Structure Software Caches

Professor Jean-Luc Gaudiot, University of Southern California

IEEE Computer Society Distinguished Visitor

Thursday, October 17, 1996 at 7:30, The MITRE Corporation, Bedford, MA

Multithreaded architectures have been proposed as an effective means to overlap computation and communication in distributed memory systems. This talk describes our I-Structure Software Cache (ISSC) runtime system to improve overall system performance.

Exercise Your Right To Vote!

Clifford Pope

As you prepare to vote in the state and national elections this November, don't forget the IEEE annual election for President-Elect, 1997 and several division and regional officers. By now each member of the IEEE should have received a ballot in the mail. The ballot comes with an instruction booklet with a statement from each of the candidates.

IEEE elections, as with most professional societies, have a "poor voter turn-out" because so few members know

or have a chance to see and hear the candidates. It is difficult to determine which candidate is the best one. But there is information available.

Ask your colleagues who they recommend. Maybe they will have met one or more of the candidates. The June, July, and August issues of The Institute have interviews with the candidates. At least one of the candidates has information on his home page

(<http://www.ece.uvic.ca/~bhargava/ieee/>).

There are two additional reasons to vote in this election. One, you can vote now. There is no need to wait until the November deadline. Two, the IEEE pays the postage.

THE PACE PAGE

A New Era Dawns At The 1996 PACE Conference

Sue Foster

There was something new at this year's PACE conference. Aside from the normal stifling Phoenix weather, which averaged near 105 degrees, there were many young faces in attendance. Now, I don't mean that there were a lot of children in tow for the weekend, I'm referring to the Young Professional program.

John R. Reinart, Region 5 Director, was appointed Chair of the "Ad Hoc Committee for Young Professional Participation in PACE" at last year's conference. He, John Wright (Santa Clara Section, Region 6), and Leann Kostek (Seattle Section, Region 6), to name a few, were responsible for getting this program off the ground. I'm told that there were at least 50 Young Professionals in attendance at the PACE conference this year - up from only a handful at last year's proceedings.

This program included sessions targeted to the younger engineer. Presentations on "Personal Positioning for Young Professionals" (Paul J. Kostek), "Network Building" (David J. Pierce), "The Consulting Option" (Bob Krause, PE), "Negotiating Skills" (Kenneth J. Cooper), "Grassroots Involvement in Technology Policy" (James H. Turner, Jr.), and many others, were well attended by both the Young Professionals and other age groups.

In addition to the Young Professional's program, the GOLD Program, "Graduates Of the Last Decade", is the latest plan to keep young engineers actively involved with the IEEE after graduation. Several surveys "...were conducted by various IEEE entities [which] identified gaps in the transition from IEEE Student Membership to graduated regular member." Some of these gaps included, but by no means are limited to, a simple change of address after graduation, or a "cultural change" - a reprioritizing of the member's life - what is necessary in college is different from after graduation which is different from mid-career needs which is different from near-retirement needs. These differences made apparent that new IEEE programs were needed. As one of these new programs, GOLD targets these areas:

- Leadership development
- Service to members (graduated-student-members)
- Membership growth (within the GOLD chapter)
- Continuity and streamlining of the student-to-member transition

There were members of the seven GOLD test sections who attended and were more than happy to explain their experiences. With the increased number of Young Professionals attending this year's conference, I'd say that the programs are well on their way to successful integration into the mainstream membership.

And, as a Young Professional attending this conference, I can say that we're just getting started!

References:

- IEEE Recent Graduate Program 'GOLD' " by David J. Kemp, Vice Chair, IEEE Membership Development Committee, 1996 PACE Conference and Workshop Proceedings. (IEEE Catalog No. UH 2965-0-0-1-0)
- 1996 PACE Conference and Workshop Proceedings

For more information on acquiring a copy of the Proceedings, contact IEEE-USA at 202-785-0017.

Susan Foster is Worcester County Section's newest addition to the Executive Committee as Student Activities Chair. She has served as Region 1 Student- Professional Awareness Conference Coordinator (and Support Coordinator) for the last year-and-a-half.

Ms. Foster currently works as a Technical Support Specialist at Process Software Corporation in Framingham with their Purveyor WebServer for Windows NT/95 products. She lives with her fiancé and two cats in Northboro.

PACE Conference Update

Larry G. Nelson Sr., Section Chair

Labor day weekend is a time for family and picnics but I spent the weekend in meetings starting at 5pm on Friday and ending Monday morning as I left to catch a plane home. What were these meetings about? Why did USAB and PACE hold these meetings and what will be happening as a result.

We all think of IEEE as a means of getting our technical information together and distributed to us by means of meetings, publications, and conferences. PACE is the part of our organization concerned with the non technical, professional side of our careers.

The HOT topic as I saw it was once again the reorganization of the IEEE. The Board of Directors after talking with Legal Council have determined they do not need to

communicate with the members prior to making changes in the way the IEEE operates or is organized. This is a board level decision. I felt that while they are our elected representatives we deserve to see what they are proposing and should have some feedback to the board of our concerns. With this in mind I drafted a proposal that was passed at the PACE conference. In brief this proposal requests that the board inform the members prior to implementing any changes and allow for feedback from the members.

The response I have been hearing is less than encouraging because some members on the Board of Directors simply want to make the changes and get down to business. My thoughts are that the IEEE is our organization and the leaders are elected to serve the members. How can they be serving us if they do not communicate openly with us? The resolution is now being sent to USAB and they are supposed to present it to the Board of Directors.

Many other issues were discussed and there were training sessions for those who attended to get everyone up to speed on the different offerings from the IEEE that will help all of us in keeping our professional careers growing.

We as a section plan on having meetings to help us along these lines and the first for this year is on alternative compensation. If you have any ideas drop me a line at L.Nelson@IEEE.org.

Get more value from your next job while saving the Employer immediate costs

The Worcester County Section is pleased to announce a PACE meeting on October 16, 1996 at the New England Electric Company auditorium in Westboro MA. We will be having a discussion on alternative forms of compensation for professionals. This is a topic that should be of interest to engineers, consultants and companies that employ such professionals. The meeting will start at 6:30 pm and will include a question and answer section after the formal presentation. The meeting is open to all who are interested in attending. The Guest speaker is Robert Adelson a prominent attorney and speaker.

Robert Adelson has been a business and tax attorney 19 years.

Since 1994, he has been a partner in a 20-attorney Boston firm, Lawson & Weitzen. Rob's business and tax work tends to focus on three market niches which tap his diversity of skill-set derived from 19 years experience:

(1) Start-up and emerging companies - , incorporation and tax structuring, trademarks, copyrights and proprietary protection, technology licensing, strategic partnering, product distribution contracts and venture capital finance. shareholder and management contracting,

(2) Consultants and Service Providers - incorporation and liability limitations, trade identification, contracting with suppliers and vendors, restrictive covenants and subcontracting, equity and board advisory opportunities;

(3) Senior executives and consultants in structuring tax-favored pay, stock options and phantom equity arrangements, relocation, facilities and services, contract terms of employment, severance, termination issues, NDAs and non-competes.

Rob is a frequent lecturer to business, professional and accountant groups. His last lectures were on July 29, in Westborough for the WECAN group on "Organizing a Product or Service-Oriented Business" and, on June 25., "Taking Your Pay in Stock or Options", in Lexington for the Independent Computer Consultants Assoc. Articles by Rob on executive and consultant compensation issues have been published in recent years in the software industry's The Culpepper Letter and in Genetic Engineering News. Other recent articles include "Legal Focus for the Emerging Business" and "Strategic Alliances and Business Contracting" which appeared in the IEEE Reflector in connection with presentations IEEE entrepreneur and consultants networks.

I-Structure Software Caches Prof. Jean-Luc Gaudiot, University of Southern California - IEEE Computer Society Distinguished Visitor

Multithreaded architectures have been proposed as an effective means to overlap computation and communication in distributed memory systems. Multithreaded architectures could be classified into blocking and nonblocking models based on the behavior of thread execution. In blocking multithreaded machines, like ALEWIFE, FLASH, *T-N.G., a global cache has been added in the memory hierarchy system to utilize the locality of shared global data. However, in other proposed nonblocking multithreaded models, no effective global data locality has been exploited.

In this talk, we describe our I-Structure Software Cache (ISSC) runtime system, which takes advantage of the global data locality in the non-blocking multithreaded models without any specific hardware support. The use of I-Structures also simplifies the cache coherence problem because of its inherent single assignment rule. This rule also makes some single assignment languages, like SISAL, benefit by this runtime system in their distributed memory system implementation.

Our simulation results show that our ISSC runtime system dramatically decrease network traffic by caching remote requests. With a cache block size of 8, a hit ratio of 95% could be easily achieved in the matrix multiplication benchmark program. By exploiting the global data locality,

the average turn around time of the remote requests is reduced. This also reduces the number of threads needed to keep the processors busy, hence the overall system performance improves.

Jean-Luc Gaudiot holds the engineering diploma from the Ecole Supérieure d'Ingenieurs en Electronique et Electrotechnique in Paris, France, and the M.Sc. and Ph.D degrees in Computer Science from the University of California, Los Angeles. Since graduating in 1982, he has been on the faculty of the Department of Electrical Engineering-Systems, University of Southern California, where he is currently a Professor. His research interests include data-flow architectures, fault-tolerant multiprocessors, and implementation of artificial neural networks.

Dr. Gaudiot was the Systems Track Program Chairman for the 1993 IEEE Symposium on Parallel and Distributed Processing, and the Program Chairman for the 1995 Conference on Parallel Architectures and Compilation Techniques. He is currently serving as Associate Editor of the IEEE Transactions on Computers and as Advisory

Board member of the IEEE Technical Committee on Computer Architecture.

This meeting is jointly sponsored by the Computer Society Chapters of the

Boston and Worcester IEEE Sections. The meeting is scheduled for 7:30 PM, Thursday, October 17, at the A-Lobby of the MITRE Corporation in Bedford Massachusetts. Coffee at 7:15. Optional dinner follows. For more information, contact Alan Brooks at (617) 271-6497 (abrooks@mitre.org).

Directions to MITRE in Bedford MA:

From N.H. - Take Rt. 3 South to Exit 26 (Rt. 62). Left on Rt. 62, Left at second light onto MITRE grounds.

From RT. 128 - Take Exit 32 (Rt. 3 North). Take Exit 26 (Rt. 62), Right on Rt. 62, Left at first light onto MITRE grounds.

MITRE Parking - Follow road to the Right past the A-Building Lobby to parking on left. Please show a photo id to the guard in A-Building Lobby.