Worcester County IEEE
Newsletter

October   1999

Worcester County Section and Computer Society Chapter
JBuilder 3 - Java for the Delphi Developer
Al Reinhart, DisCom Systems
October 18, 1999, 7:00 PM, Kronos, Inc., Waltham

A review and demonstration of JBuilder 3, the latest release of Borland's visual development tool for creating 100% Pure Java enterprise-scale, distributed applications for the Java 2 platform.

Worcester County Section and Computer Society Chapter
What's Wrong With Speech Recognition
Dr. Jordan R. Cohen, Dragon Systems, Inc.
October 21, 1999, 7:00 PM, Compaq Computer, Shrewsbury

Speech Recognition is achieving remarkable technical and financial success in the marketplace. Computation and memory now support the demands of statistically based transformation of acoustics to words. Dr. Cohen's talk will examine the state of the art with demonstrations, and explore some other scientific areas for a perspective of where we are and where we go from here.

What's Wrong With Speech Recognition
Dr. Jordan R. Cohen, Dragon Systems

Speech Recognition is achieving remarkable technical and financial success in the marketplace. Computation and memory have now advanced so that they support the significant demands of statistically based transformation of acoustics to words.

The current solutions are not a panacea, and they do not exhibit the characteristics of even a competent 4-year old in the ability to account for dialects, speaking style, or acoustic variability. Speech technology advances at a predictable rate, parallel to that of the increase in computational speed and memory size. The larger scientific issues remain unaddressed.

One is tempted to examine the history of science for guidance in taking the next large step in speech research. What are the scientific issues, and how does one progress from the current state to one of competent speech manipulation? This talk will examine the issues from the perspective of the history of Astronomy. We will assess where we are and where we go from here.

As an added bonus there will be some demonstrations about the state of the art.

Jordan Cohen is the Director of Business Relations at Dragon Systems, Inc. Dragon is the world leader in dictation software, and sells a complete line of Naturally Speaking software for home and business use.

Jordan has been at Dragon for 3 months, and was previously a Research Staff Member at the Institute for Defense Analysis in Princeton, NJ; a staff member of the Continuous Speech Recognition Research Group at IBM T. J. Watson Research Labs, and an employee of the National Security Agency. He has attempted to break speech recognition systems for 30 years, accomplishing this goal more often than was sensible, but not enough to figure out what was going on!

This joint meeting of Worcester County Chapter and Computer Society Chapter, IEEE will be held on October 21, 1999, 7:00 PM at the Compaq Computer Corporation Amphitheater, 334 South St., Shrewsbury, MA

Directions:

From the East, Take Route 9 from Route 495, go several miles on Rt. 9 (through Westboro & Northboro to Shrewsbury). After passing the Rt. 20 interchange, make a left at the next traffic light onto South St. The Ragsdale Superstore is on the Southeast corner.

From the West, take Route 9 East (Worcester, to Shrewsbury). After passing the Route 140 interchange, make a right at the next light onto South St.

Compaq is located up the hill on the right. Enter the main entrance; the amphitheater is up the stairs on the left.

IEEE To Award $10,000 Scholarship At Intel Science Fair

PISCATAWAY, NJ, 8 April 1999 - IEEE Educational Activities announced today that, at the 1999 Intel International Science and Engineering Fair (ISEF) to be held from 2-8 May in Philadelphia, a $10,000 scholarship will be awarded to the high-school student whose project best shows "outstanding achievement in the research and presentation of engineering knowledge in electrical engineering and information technology or other IEEE fields of interest."

This "IEEE Presidents' Scholarship" will be the single largest award given by an association at this year's fair. The winner will receive $2,500 per year for each of the four years of undergraduate study, provided "an IEEE field of interest" remains his or her declared major. In addition to the monetary award, the student will receive a plaque; a free IEEE Student Membership; and a CD-ROM and two videos that take an in-depth look at engineering careers.

Ken Laker, IEEE President, said, "One of the IEEE's strategic initiatives is to enhance science and engineering education for pre-college students. What better way to support this goal than to align with ISEF—the most prestigious academic event of its kind—and make an all-important investment in the future of the engineering profession." The IEEE has committed to providing a scholarship package at the next four Intel Fairs - a total of over $40,000.

Beginning in 1950, the International Science and Engineering Fair is the only worldwide competition for students in the ninth through twelfth grades. In 1997, Intel committed significant funds to become the title sponsor of this prestigious program. Considered by many in education to be the most enlightened program for science and engineering, INTEL ISEF provides for scholarships, internships, special awards, and travel grants totaling $2 million to be awarded to deserving students each year.

For more information, contact Christy Bouziotis, Educational Activities, at c.bouziotis@ieee.org, or by phone at 1.732.562.6526.

National Engineering Design Challenge Seeks Student Teams

The National Engineering Design Challenge (NEDC) is a hands-on program managed by Triangle Coalition member JETS. Through the Challenge, high school student teams, with the advice of a teacher-coach and volunteer engineer from the local community, design, build, and demonstrate a working model of a new product. To increase student interest and social understanding, the projects normally are consumer based and emphasize universal design. Thus, students learn two critical features of a career in engineering, while also having fun. NEDC is a part of National Engineers Week (www.eweek.org), next scheduled for February 20-26, 2000. For more information visit JETS new website at www.jets.org or e-mail jets@nas.edu.

JBuilder 3 - Java for the Delphi Developer
Al Reinhart, DisCom Systems

The October meeting of the Delphi Developers Group of Greater Boston will focus on a review and demonstration of JBuilder 3, the latest release of Borland's visual development tool for creating 100% Pure Java enterprise-scale, distributed applications for the Java 2 platform. JBuilder 3 includes a unique combination of features for creating platform-independent business and database applications, distributed Enterprise applications, and JavaBean components. JBuilder 3 delivers a comprehensive set of tools for creating pure Java applications, applets, servlets, JavaBeans, and Enterprise JavaBeans.

JBuilder features that will be reviewed include:
- Platform independence with industry standard pure Java code generation.
- Visual development using the Java 2 JFC/Swing components including support for the Swing data models.
- Enhanced database components with source code for creating professional database applications, including the DataExpress data-access components and enhanced dbSwing data aware components (with industry standard JDBC connectivity.)
- JDataStore pure Java embeddable database for creating small footprint, portable database applications.

For a complete list of JBuilder 3 features, white papers, and reviews visit the JBuilder home page: http://www.borland.com/jbuilder/

The October 18th meeting starts at 7:00PM and is held at Kronos, Inc. 400 Fifth Avenue, Waltham, MA. For detailed directions and a map visit www.DisCom.com/Delphi. Al Reinhart Phone: (508) 869-6417.

THE PACE PAGE

Share Your Workforce-Challenge Solutions at Careers Conference

With a focus on "Technology, Environments and the Changing Role of the Engineer," IEEE-USA's Eleventh Biennial Careers Conference, April 26-29 in San Jose, Calif., will provide solutions to engineering workforce challenges. If you can provide some of these solutions yourself, IEEE-USA invites you to submit your ideas through the conference call for papers going on now. The conference is especially beneficial to managers, academic specialists, government officials, technical training specialists, and working engineers who seek calmer waters in an era of career turmoil. With "rightsizing," global competitiveness, defense industry restructuring, mergers and acquisitions, telecommuting and other issues, how can workers and companies hold on and move forward?

The Careers Conference will address these issues, with a special interest in, among other topics: managing virtual companies, recruiting trends, using careers fairs, mentoring programs, reward programs, dealing with troubled employees, performance reviews, working with older engineers, salary issues, innovation and entrepreneurship, career planning and more.

To submit your 500-word abstract for consideration, contact Vin O'Neill at v.oneill@ieee.org, call 202-785-0017, or fax 202-785-0835. The deadline for abstracts is Oct. 15; selected speakers will be notified by Nov. 15.

Pre-College Education Coordinating Committee Meeting Notes

Larry Nelson

PECC REPORT - Meeting - 17 January 1999 - Newark Airport Marriott

Discussion : What should the committee make its focus for the next one to three years? Based on the recommended outcomes of the TLC workshop and tied in with the strategic plans for the Institute - what should be the primary focus and strategies of a precollege program?

Conclusions: IEEE is in a unique position and it should leverage its strengths to bring engineers and educators together to raise the level of technological literacy that results from K-12 education. A two pronged approach is called for in having the engineering community act as a resource and catalyst for education.

The first is working with teachers currently in the classroom (IN-SERVICE). The second, and just as important, is to influence the Education programs in the universities (PRE-SERVICE). One other less easily accessed approach is to work to improve the technical education available at community colleges, since it has been concluded that nearly 50% of future teachers receive their math and science education in community colleges before they transfer to a four-year program.

In working with in-service teachers, a searchable Website was suggested which would serve as a major location for many different resources, including:

- A network of helpful, trained engineers (P.E.T. project)
- A listing of educational materials (kits, publications, etc.)
- A schedule of appropriate conferences/workshops
- Guidelines for proposal writing/funding sources
- Information on educational standards
- Awards and recognition programs
- Virtual experiments/virtual museum
- Best practices

This site, TLCNet, would be essentially a directory, linking to other sites where this information was available. It would also use the IEEE regional and technical infrastructure to identify resource engineers, technical guidance, and related activities. The P.E.T. project to train engineers to work with educators would be closely tied in and would result in an informed, available network of engineers.

Very little information is to be originally developed - instead IEEE will identify and research existing sites and materials and oversee a peer review process to determine their accuracy and value to the education community.

The Pre-Service approach is aimed at students in university education programs. The goal of this approach is to improve the level of technical education they receive during their teacher training, so that they can be better teachers of math, science and technology. Again, leveraging IEEE's strengths, the Institute will hold a workshop bringing together Deans of engineering (many IEEE members) and Deans of Education from the same universities. These individuals most times do not even know each other and therefore have no history of working together.

The goal of the workshop would be to open channels of communication so that they can go back to their respective faculty and encourage intra-department course development. The benefits could be mutual. Not only could education

students learn more about technical subjects and how technology works, but engineering students would have the opportunity to learn more about the communication and "people" skills that make good teachers.

The key themes of these recommendations are that they involve COLLABORATION. They are not mutually exclusive to either engineers or educators. Rather they require the commitment and strengths of both groups, and as a result, they have the potential to benefit both groups and most importantly, for society at large. Following is a list of benefits for all stakeholders:

For teachers/educators:
1. Improve their knowledge of technology
2. Provide resources/aids for teaching
3. De-isolate them from the community
4. Offer opportunities for reward/recognition
5. Help them do their job

For engineers:
1. Prepare them for working with educators
2. Improve their image as community leaders and contributors to society
3. Improve their presentation/communications skills
4. Help develop a technologically literate society - one that values engineers and developers of technology

Other peripheral IEEE activities, which might integrate with these major plans, will be considered. These include the following:

- Support of existing precollege education programs such as FIRST, Intel Science/Engineering Fair, RESEED, etc.
- Publication of a technology education magazine
- Awards for educators
- Special membership for educators