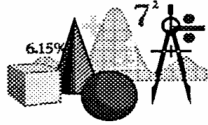




IEEE

SPARKS

IEEE Daytona Section Newsletter
April 2010



NOTES FROM THE CHAIR

This is the last issue of Sparks before the summer.

The next issue will be in September. Our next meeting will feature the ERAU student branch as they discuss their problems and accomplishments in preparing and competing in the Southeast Con robotics competition. If you can only make one meeting a year, this is the one to attend.

Thanks to Dr. Thomas Yang, the Vice Chair, who scheduled all of the speakers for last year and this year - A great job!

The Computer Society met on March 9 at Embry Riddle Aeronautical University (ERAU). The speaker was Dr. David Gluch, who discussed "Model Based Software Engineering: AADL in Action". The talk was well attended. Another society meeting is planned for the fall.

Jeanette Barrott attended the PACE (Professional Activities Committee for Engineers) in Memphis and submitted the following edited report.

For those interested in more detailed information on the conference as the whole, please visit <http://ieee-usa.blogspot.com/> where the meeting was blogged.

A few action items to take back from the meeting:

**The membership should be strongly encouraged to vote for their IEEE representatives at both regional and national levels. This is one of the ways membership involvement is calculated, and it can be used to help determine which regions/sections have the most involvement.

**We should nominate someone for a Regional/Divisional Award for their Pre-College efforts in obtaining and installing the SRT.

**IEEE-USA employs a lobbyist whose job is to tour the country and speak on scientific issues in the government. Of particular interest in our community is the speaker on NASA-related issues.

This would be free to our section, and I have received permission from Dean Mirmirani to host it at the university when we are ready. It could be an excellent source of visibility for the IEEE in the local community as active, engaged, and involved, and could also serve as a recruitment activity for our student membership.

**WordPress, an open-source very flexible graphical-format webpage development platform, will soon be available for all IEEE websites. Sections are encouraged to discuss this option if their membership would desire a more interactive website allowing for discussion and other "web 2.0" capabilities.

**Sections and regions are encouraged to form groups and pages on social networking media, such as FaceBook and LinkedIn, to link to the larger IEEE-USA and IEEE networks on these sites. Similarly, members currently active in these communities are encouraged to join the IEEE-USA, IEEE, and various society groups in these communities.

**A large, somewhat ignored, niche in PreCollege outreach is home school. This would be an excellent starting point for our SRT-based activities, and could be a good resource for teachers.

**IEEE-USA, through the PACE Network, has obtained copies of the "Engineering Go For It" magazine, a publication of the ASEE geared towards middle school students, primarily girls. All Sections are encouraged to request up to 200 copies for specific activities in their area.

Dr. Yang attended SoutheastCon in Charlotte for the section. Following is his edited report.

The conference attracted more than 700 attendees. Besides technical paper presentations, the conference had many tutorials, exhibitions and

student competitions, as well as IEEE Councils' meetings and Region 3 meetings. Attendees from the Daytona Section included Student Activity Advisor Dr. Jianhua Liu, Region 3 Life Member Coordinator Charles Husbands, Section Vice Chairman Dr. Thomas Yang, and six members of the student branch. The theme of the conference was "Energizing our future", featuring a large number of energy tutorials, papers, and panels. I found the series of Professional Development tutorials especially helpful. They are led by experienced engineering professionals, and address various non-technical issues critical to many IEEE members, such as project management, public speaking, career preparation, and professional licensure.

In the Florida Council's meeting, section representatives reported noteworthy activities over the past six months. I discussed the Daytona section activities. Florida Council (FC) Chair Mr. Quang Tang presided at the meeting, and he asked sections to submit updates to the council for update of FC website. Mr. Jim Anderson prepared the meeting report. As FC Treasurer, he reported that the council is doing well financially, and has sufficient funding for the foreseeable future. As Florida West Coast Section (FWCS) representative, he encouraged sections to adopt a uniform format for their section reports. A sample report can be found at their website. Also, FWCS is using dynamic blogging to facilitate more frequent update to its website (iee.org/fwcs). Student chapters were requested to submit reports of student activities to Mr. Butch Shadwell. It was also mentioned that financial support is available from Region 3 for two officers per student branch to be trained. The next FC meeting will be in June 2010.

During the conference, I learned that Region 3 has 10%-15% members currently unemployed, and it is important for IEEE to view employment assistance as a high priority when introducing new initiatives. The current initiatives are mostly concerned about enhancement of IT infrastructure. Region 3 meetings also emphasized the importance of new officer training via IEEE online resources and assistance from past officers. I had the chance to talk briefly with Past Director of Region 3, Mr. Bill Ratliff. He emphasized the importance of viewing the member as a person (not just a revenue stream) in membership development, and he said he enjoyed working for IEEE very much because of the impact IEEE is

making on humanity, especially on the lives of technical professionals.

On Saturday, Mar. 20th, six students from Embry-Riddle participated in Robotics Hardware Competition under the supervision of Dr. Jianhua Liu. The primary objective of this competition was to drive around a track autonomously as many times as possible within the given time limit. The track contained several different types of obstacles and terrains, and the vehicle had to be powered by solar panels. More than 40 university and 5 "open division" teams participated in the hardware contest. The ERAU team competed in the "open division", because a graduate student was participating. Having scored 2 points in three trials, the ERAU team ranked 2nd in the "open division", and received a certificate during the award banquet. The top three university teams were West Kentucky University, University of Florida, and Mississippi State University.

Charlie Husbands gave a great update on the progress of the SRT at our last meeting. An ExCom is planned to solidify plans for the summer and fall.

Roger Grubic

APRIL PROGRAM EMBRY RIDDLE STUDENT BRANCH, 2010 ROBOTIC COMPETITION REPORT

OUR SPEAKERS

Members of the Embry Riddle Aeronautical University Robotics Team.

BRAIN TEASER CHALLENGE SOLUTION MARCH 2010 BUTCH SHADWELL

Pulse code modulation was the topic last month. "...he decided to build a codec that would send 8 bit PCM audio at 2.5 kilobytes per second. It seemed to work pretty well on most male voices, but there was weird distortion with music and some women. Fred may have fallen asleep in his DSP class. What do you think could be his problem? Fred often preferred to be called Stanley Smith for some odd reason, but I am not sure why I am telling you his alternate identification."

The clue referred to Fred's alias, Stanley Smith. And of course the answer to the question was aliasing. At the given sample rate, the highest frequency that can be digitized properly is 1.25kHz.

If spectral components higher than this frequency are fed to the analog to digital converter at amplitudes greater than 1/512 of the peak signal voltage, then that energy will interact with the

sample frequency and produce noise. The typical answer is to have a filter on the analog input that attenuates these higher frequencies, or you can over sample and filter it after digitization. But I bet you already knew that.

BRAIN TEASER CHALLENGE

APRIL 2010

BUTCH SHADWELL

Space travel has been the spark of imaginary adventures for over a hundred years. Jules Verne wrote "From the Earth to the Moon" in 1864. A popular film today is "Avatar" which takes place on a hypothetical planet some distance away where a very valuable mineral (unobtainium) is in abundance. One of the things that always bugs me about these science fiction stories is that they always underestimate the sophistication of future technology. Avatar is supposed to take place over 140 years into the future, and the military is still flying around in a type of helicopter and firing weapons that have chemically propelled bullets. And the worst thing is that they miss the target most of the time (also true in Star Trek). I am quite confident that in 100 years we will have fire control systems in handheld weapons that will ensure better accuracy, if only to conserve energy.

I can imagine that many of you are hoping that in 100 years the whole notion of weapons is obsolete. Today we improve the accuracy of air dropped ordnance, and reduce collateral damage, by using a target designator system. Can anyone tell me how these work?

Reply to Butch Shadwell at b.shadwell@ieee.org (email), 904-223-4510 (fax), 904-223-4465 (v), 3308 Queen Palm Dr., Jacksonville, FL 32250-2328.

(<http://www.shadtechserv.com>) The names of correct respondents may be mentioned in the solution column.

EDITORS NOTES

The **SPARKS** newsletter is also available on our website. The website address is shown in the Section information box to the right.

Region 3 website

<http://www.ewh.ieee.org/reg/3/>

Melbourne Section website

www.ieeemelbourne.org

Orlando Section website

www.ieee.org/orlando

FUTURE MEETING DATES

The meeting dates for the fall session are September 23rd, October 28th and December 7th.

2010 SECTION OFFICERS

Chair – Roger Grubic

386-441-8958 roger_grubic@ieee.org

Vice Chair - Dr. Thomas Yang

386-226-7098 yang482@erau.edu

Treasurer - Tracy Wichmann

386-673-2753 tracy@alum.mit.edu

Secretary/SPARKS Editor - Allan Jusko

386-671-3706 a.jusko@ieee.org

Membership Development – Dr. Ilteris Demirkiran

386-226-6988 demir4a4@erau.edu

Media – Dr. Hugh Ward

386-738-3412 hcward@cfl.rr.com

PACE Representative's –

Dr. William Barott

386-226-8973 barottw@erau.edu

Jeanette Barott

386-226-7405 barottj@erau.edu

Awards - Dr. Thomas Yang

386-226-7098 yang482@erau.edu

Life Member Chair – Ron Gedney

386-478-1204 r.gedney@ieee.org

Computer Society Chair – Dr. Tim Wilson

386-226-6994 wilsonsti@erau.edu

Student Activities - Dr. Jianhua Liu

386-226-7713 liu620@erau.edu

ERAU Student Chapter Chair- Jason Davis

321-287-8697 davisc9c@erau.edu

Webmaster – Charlie Husbands

386-760-7163 chusbands@ieee.org

The website address for the Daytona Section is:
<http://www.ieee.org/go/daytona>

APRIL MEETING

Thursday April 29th at the Halifax River Yacht Club
331 South Beach Street, Daytona Beach, Florida 32114
Just south of the Fire Station at the corner of Beach and Orange

AGENDA

6:30 PM Cocktails
7:00 PM Dinner
8:00 PM Program

OUR SPEAKER – ERAU Robotics Team

TOPIC– ERAU Student Presentation

It's Caribbean night! Please call with your menu selection. All entrées are \$18.00 each

Jerk Chicken w/citrus sauce over
black beans and roasted corn

Marinated Beef Sate w/ Jamaican rice & peas

Smoked Fish Cakes w/Jamaican rice & peas

{Entrees served with,

{Vegetable du jour,

{Roll and Butter, Garden Salad,

{Coffee/Tea

A Veggie plate is available upon request for \$10

Please contact the secretary with your dinner selections or for program information. Dinner selection's must be in by Wednesday morning so the club has time to order and prepare

Allan Jusko

Secretary

386-671-3706 a.jusko@ieee.org

IMPORTANT: If you make dinner reservations and are unable to attend, call at least 24 hours prior to the meeting to cancel. The Section is charged for all dinners ordered.
