

IEEE *Piedmont Potential*

A publication of the IEEE Piedmont Section
November 2003

Section Web page: <http://ewh.ieee.org/r3/piedmont/>

Council Web page: http://www.ieee.org/sc_council

Today's Engineer: <http://www.todaysengineer.org>

Message from the Chair

Mark Stokes

Quick note on meeting times and locations: Last month we had our meeting at Andy Pang's conference room. This location was very nice and I hope we can have it there again. Unfortunately, the speaker we had scheduled for November cancelled last week. This caused a little scheduling mixup and we are unable to use Andy's meeting room this month as the room was previously scheduled for our regular meeting time. It has seemed to me in the past that our members are more interested in a consistent date/time, than they are concerned about a consistent location. There are many often conflicting views about this. This month, I am scheduling the meeting for the previous location at the La Quinta Inn in Greenville. It's a nice space and we had previous arrangements with them. I urge each of you to let the executive committee know of your preference for meeting times/locations. Is it important that we have our meetings in the same place/time every month? You get the picture. Personally, I'd like to have the meetings back in Clemson. Ultimately, it is up to the Piedmont Section Executive Committee to decide where meetings are to be held and when.

Reminder: This month is officer elections! Please come out and vote for your favorite officer!

NEXT MEETING

November 20, 2003

"Visual and Auditory Spatial Sensing"

Stan Birchfield

Dept. of Electrical and Computer
Engineering

Clemson University

We humans rely predominantly upon our eyes and ears to gather information about the three-dimensional world, such as the shapes and locations of objects. Similarly, video and audio are the two primary types of data used by computers for automatic sensing in 3D. In this talk I will discuss the two classic problems of stereo vision and acoustic localization. We will see that both problems share much in common, although they differ in many ways as well.

For both problems, I will describe some of the challenges involved, as well as the latest research trends. Stereo vision experienced a significant breakthrough a few years ago when algorithms based on graph cuts were shown to be able to minimize functionals over the entire image. I will describe these techniques and some extensions that have been added by myself and others, as well as point out situations in which the graph-cut algorithms fail. A similar breakthrough has occurred in acoustic localization, where researchers have recently

discovered that all the signals can be taken into account in an efficient manner, thus replacing the previous sub-optimal and time-consuming methods. I will describe our latest work on this problem, including a unifying framework that encompasses the recently discovered efficient method along with the Bayesian formulation and the traditional beamforming and time-delay-estimation methods. Together, this work on stereo vision and acoustic localization brings us a little closer toward achieving the goal of robust spatial sensing.

Meeting Details:

Date: November 20, 03

Place: La Quinta Inn, Greenville

Time: 6:30 PM Social ½ hr
7:00 Diner/program

There will be a catered dinner. Cost is \$5 for the meal. Please RSVP to Mark Stokes at m.stokes@ieee.org. For directions call 864-233-8018. Mark will also be providing a car pool ride to anyone who can fit into his minivan. Please contact him for arrangements (and directions to his house).

U.S. EE Unemployment Rises In 3rd Quarter

IEEE-USA TODAY

Although the unemployment rate for all workers fell slightly in the third quarter, it moved in the opposite direction for U.S.

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electrical and electronics engineers (EEs), according to the U.S. Department of Labor (DOL), Bureau of Labor Statistics. The jobless rate for EEs rose from 6.4 percent in the second quarter to 6.7 percent in the third, while the rate for all workers fell from 5.6 percent to 5.5 percent. At the same time, the number of employed EEs fell by 37,000 (from 386,000 to 349,000).

Read more about it at <http://www.ieeeusa.org/releases/2003/101403pr.html>

IEEE-USA Recruits For 2005 Government Fellowships

IEEE-USA TODAY

IEEE-USA is seeking applicants for Congressional and Engineering & Diplomacy Fellowships in 2005. Congressional Fellows spend a

year working for a Member of Congress or congressional staff, often taking on both technical and non-technical issues. Engineering & Diplomacy Fellows select an assignment to a specific office or bureau with the U.S. Department of State, serving as a technical adviser on such topics as non-proliferation, international information policy, nanotechnology, and related foreign policy issues. Fellows receive a stipend of \$50,000, plus relocation assistance, and are required to participate in a two-week orientation session organized under the auspices of the American Association for the Advancement of Science. Applicants must be U.S. IEEE members in good standing, U.S. citizens, and have the requisite degrees or experience. Diplomacy Fellows are also required to have or obtain a security clearance.

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Application deadlines for the 2005 Fellowships are 23 February 2004.

For more information, see: <http://www.ieeeusa.org/forum/GOVFEL/index.html>

Latest Technology Policy News Covered In *IEEE- USA Eye On Washington*

IEEE-USA TODAY

For the latest on the prospects for the energy bill, Senate action on a bill to prevent discriminatory use of genetic information, House Small Business Committee hearings on implications of high-tech outsourcing, go to the 20 Oct. edition of the biweekly e-zine at <http://www.ieeeusa.org/forum/EYEONWASHINGTON/03eow16.html>.

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