

**Phil's
Quill**

Last month, our new chapter of the Engineering in Medicine and Biology Society (E.M.B.) held their first meeting, with Dr. Marlin S. Heilman speaking on a "Patient Wearable Automatic Defibrillator". Bob Brooks, the Chapter Chair, has been instrumental in getting that chapter established. Now, Bob's employer, Medrad Inc., has donated \$2500 to sponsor activities of the E.M.B. chapter. The Pittsburgh High Tech Council initiated the request for sponsorship of the chapter, and Medrad generously responded. Some of the activities the E.M.B. chapter is considering, supported with the sponsorship, are increasing the technical meeting schedule, a web site, and a college level course in biomedical engineering. I congratulate the support the industry has shown so far for the E.M.B. Society.

The Pittsburgh section is continuing its fascination with Lego building kits. First of all, member Jim Schimpf and myself were sponsor judges for the Pittsburgh Engineering and Science Fair, held March 23. We gave two awards on behalf of the I.E.E.E., and both projects were built with Legos. Now, Mike Boccabella has volunteered to design a project for the final meeting of the G.A.T.E. Computer Engineering Apprenticeship Program students. The students will build and program a robotic transport system that will transfer a ping pong ball from one location to another, using Legos. What can I say? We love playing with Legos!

- Philip Cox

Communications Society**Spare Capacity Allocation by Survivable Routing**

Yu Liu, Ph.D. candidate, University of Pittsburgh



Spare Capacity Allocation (SCA) is an important part of fault tolerant network design. In SCA, one seeks to determine where to place backup paths and how much spare capacity must be allocated to guarantee seamless communication services survivable to a set of failure scenarios on mesh networks. SCA is an NP-hard problem. A two pronged approach to the optimal SCA solution will be presented: (1) unravel the structure in a novel matrix-based model, and (2) find an effective algorithm, called successive survivable routing (SSR). Furthermore, several SSR extensions, considering SCA with non-linear link cost, failure dependent path restoration, and node failures, are given. The numerical comparison shows that SSR find near optimal solution with surprisingly fast computation speed. With other advantages including distributed implementation, and adaptability to traffic fluctuation, SSR is a very good algorithm for the SCA problem on a self-configuring QoS-enabled next generation Internet.

Place: 410 SIS Building
135 N. Bellefield Ave.
Pittsburgh, PA 15260

Date: May 21st, 2001

Program: 3.00 PM

Mine Safety Appliances Company**Career Opportunity****Sr. Electronics Engineer****Cranberry Instrument Division**

A Senior Electronics Engineer is needed to develop and work with others to develop electronic sensory instrumentation for use in MSA's instrument products.

- The incumbent will be expected to operate at a senior level, which entails technical leadership of major project efforts. It may also include supervision or work direction of 1 – 3 junior engineers or technicians. Projects will be assigned in any area of instrumentation development including portable instruments, permanent instruments or thermal imaging.
- Participation in, and in some cases leadership, of cross-functional project teams in the development of new commercial products. The job will include any necessary tasks, including documentation and validation of final product designs.
- Integration of electronic designs with mechanical, optical, test and manufacturing capabilities in order to ensure successful products are delivered on time while meeting agreed product performance specifications.
- This position will be responsible for complex electronic hardware design in the areas noted below.
- Experience and skills in: Circuit board design and layout, low power electronics design, small signal circuits as found in sensory instrumentation, design experience with intrinsically safe circuitry, knowledge of electronic modeling software; i.e., SPICE, RFI/EMI shielding and CE marking requirements, battery systems and charging technologies, power supply design, embedded software, DSP, system packaging

BSEE (not BET) from an accredited institution and 5 – 10 years' experience. MSEE is a strong plus. If you are interested and meet the qualifications, contact Patti Martin at (724) 776-8683, FAX (724) 776-8755 or email Patti.Martin@MSAnet.com.

2000-2001 Pittsburgh Section IEEE Program Calendar

Group/Society	September	October	November	December	January	February	March	April	May
ExecCom Phil Cox (412) 820-1302	21 Point Park	19 WVU	16 Point Park	21 Point Park	18 Point Park	15 Point Park	12 CMU	19 Point Park	17 Point Park
Section Mtngs Phil Cox (412) 820-1302	16 Fall Picnic	25 SPICE Tutorial	1, 8, & 15 SPICE Tutorial			National Engineers Week		24 History Dinner	
Upper Mon Stephanie Caswell (304) 293-0405									
Industry Applications Harry Hagerty (412) 487-8235	19 Fuse Protect. Medium Volt. Power Sys.				16 K-Factor Distribution Transformer				
Magnetics Miklos Gyimesi (412) 268-2308									
Computer Gerry Kumnik (412) 487-1430		26 Distributed Architecture					20 FreeMarkets		
Communication Prashant Krishnamurty (412) 624-5144					19 Wireless Access Networks				21 Spare Capacity Allocation
Power Eng. Gregory Reed (724) 772-2158									
Membership Jim Karn (412) 732-9000									
Signal Processing Pat Loughlin (412) 624-9685		16 Excising Interference							
PACE Dennis Steward									

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