Wavelengths

Volume 52 – Issue 01

November 2013

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Editor's Message:

IEEE Southeastern Michigan (SEM) Section Members:

Normally this would be the column that would hold a message from our Section Chair. Imad Makki (SEM Chair) has been overwhelmed with work, and is currently on international travel and is unable to put together a personal message for this month. We look forward to a message from Imad in next month's issue.

The IEEE SEM Section has seen a number of significant changes in recent years, and perhaps the most dramatic has been driven by the robust return of the automotive industry, as the US economy recovers from the events of 2009. When business once again picked up many local automotive companies that had 'lost' engineers and technicians were left short-handed.

During the 'recovery' period, the resulting pressures of 12 to 16 hour work days for many of our members who were responding to the need to keep their businesses operating took an inevitable toll on the ranks of the Section leadership. 2011 and 2012 were especially difficult, and it was during that time that we lost the editor of our Section Newsletter "Wavelengths".

The last known issue of Wavelengths was now well over two years ago, in July of 2011.

Recent events have made it clear that the overall communications level within the Section needs a regularly published Section wide Newsletter.

Most of our members receive regular e-mail messages from our active Affinity Group, Chapter and Section officers with news and information about Section activities. We recognize that we all receive a high volume of e-mails and we have been working to find ways to reduce that load.

At the same time, it is also obvious that a number of items that are of general interest or of only interest to select groups of members would be more appropriate in communication media other than e-mail messages or any of the other communications linkages we are presently developing.

Quite a few members, (like me), are also more comfortable receiving their 'news' in a newsletter format. Such items as a summary of recent Executive Committee minutes and actions would be more appropriate in a newsletter section devoted to that function. This gives interested members access to the information and allows those who are not interested in that aspect of IEEE operations to 'choose' if they wish to read it. We feel you should have the opportunity to make that choice.

Kimball Williams

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Fall Section Conference

FALL CONFERENCE

Wednesday Evening, November 6, 2013

Adoba Hotel (was Hyatt Regency Hotel)
600 TOWN CENTER DR, DEARBORN, MI, US, 48126
Tel: +1 313 592. 3622

Meeting Agenda:
5:00 PM - 6:30 PM Registration
Display Tables / Student Posters / Networking
6:00 PM - 6:30 PM Poster Presentations and Poster Judging
6:30 PM - 7:30 PM Technical Presentations (Sequential Presentations)
7:30 PM - 8:00 PM Dinner
8:00 PM - 8:30 PM **Keynote Address**
8:30 PM - 9:00 PM Awards and Recognition
9:00 PM - 9:15 PM Cultural Activity

Key Note Address: The Future Starts Here.....

Rock Marcone
Director
Maneuver Collaboration Center (mc2)
General Dynamics Land Systems
Lieutenant Colonel (Retired)

The future starts here with a new model for rapidly delivering solutions to our customers. General Dynamics Land Systems is a global leader in the design, development, production, and support of ground combat vehicles and has a strong foundation of providing solid and strong system engineering capabilities to our domestic and global customers across the military vehicle spectrum. Now, General Dynamics is meeting the future needs of its customers through an innovative and collaborative process that leverages a full spectrum of engineering expertise and the resources of the Maneuver Collaboration Center (mc²). The collaboration center's highly charged and motivational environment inspires ideas from General Dynamics' employees, domestic and international customers, suppliers, academia and Warfighters. With a simple click of a mouse, a global community of knowledge can be tapped. This streamlined process is the key to spring boarding the rapid response that the modern battlefield demands.

Rock is the key advocate for the mc² community. In that role, Rock brings brilliant people together to find innovative solutions for GD customers through collaboration and innovation.

Conference Website: www.ieee-sem.org/fall

IEEE Southeastern Michigan
Electrical and Electronic Engineer ∎ Creating Our Future

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Technical Presentations
Sequential Presentations Followed by Dinner and Keynote Address

Non-Linear Manifold Learning

Dimensional reduction techniques, both linear and non-linear, play an important role in machine learning, and have many applications, including software engineering, pattern recognition, and content-based multimedia retrieval. These techniques improve the running time of many algorithms, and the algorithms many times produce better results. The presentation will discuss advances in the area of manifold learning, an area which relies on non-linear techniques, as well as the newer topological-based methods.

Dr. William Grosky
Department Chair
Computer & Info. Sci.
Univ. Mich. Dearborn

Embedded Sensors to Monitor Structural Armor Health

Some of the current approaches to achieve structural health monitoring in armor using embedded sensors will be discussed. These methods include resonance vibration, guided waves and tomographic imaging using piezoelectric sensors. A sub-topic of discussion will be the research on spintronics for an embedded antenna technology in composite armor structures.

Dr. Thomas Meitzler
Sr. Tech. Scientist
Electrified Armor Lab.
RDECOM TARDEC

Technology in the Age of Mindfulness

Advances in technology and global trade are ushering in an age where scarcity is shifting from resources and knowledge to "mindfulness". This is reflected in the gap between resources, knowledge and action. This presentation will discuss the types of personal mentoring technologies needed to remove the knowledge action gap.

Dr. Jasprit Singh
Prof. Elect. Eng.,
Computer Science
& Applied Physics
Univ. of Michigan

Permutation Distance in Similarity Retrieval

Similarity retrieval implies locating items in a large collection that are similar to a given item. As the size of the item collection grows, better methods are needed to keep the similarity search manageable. This presentation will look at the use of permutation distance in such settings including how the idea of permutation distance can be used to build image features for content-based image retrieval.

Dr. Ishwar Sethi
Prof. Computer Sci.
and Engineering
Oakland Univ.

Networked Automotive Battery Management Systems (BMS)

Management of battery systems plays a pivotal role in electric vehicles, and in support of distributed renewable energy generation and smart grids. Reliable and efficient battery management, including charge/discharge strategies, diagnosis, control design, and large-scale networked used battery systems, demands new information processing and control methodologies. This presentation will describe recent advances in these aspects of BMS.

Dr. Le Yi Wang
Professor, Dept. Elect.
& Computer Eng.
Wayne State Univ.

Cultural Entertainment
Indian Classical Dance
9:00 – 9:15 PM
Following Awards and Recognitions

Vidyanjali Dancers
Bharatha Kala Shreshta
Sudha Chandrasekhar

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Master of Ceremony

Guest of Honor

Dr. Virinder Moudgil
President and CEO
Lawrence Technological
University

Matt Roush
Editor
WWJ
Technology Report

Special Recognition

Risarg (Reggie) Huff
NSO - Director Homeless
Recovery Services and
Adjunct Faculty
WSU School of
Social Work

Technical Presentations

Sequential Presentations Followed by Dinner and Keynote Address

Securing Personal Electronic Devices

Our personal devices, such as personal computers and smart phones, are used to access a lot of sensitive information. Unfortunately, securing these devices to detect and prevent information leakage against malicious software is a significant challenge. This presentation will discuss research on securing information on personal devices from malicious software.

Dr. Atul Prakash
Professor, Computer
Science and Engineering
Univ. of Mich., Ann Arbor

The Changing Face of the Technology Professional

In our on-demand world, it is important to have the right skills and expertise at the right time to drive technology and innovation. We recently formed the IEEE Consultants Affinity Group to serve as the focal point for independent technology professions dedicated to helping clients solve business challenges.

Jeff Beyer
Independent Consultant
IEEE Consultants
Affinity Group

Mind-controlled Robots and Prosthetics Using Non-invasive Electrodes

The human body emits electromagnetic waves from brain, heart and muscles that can be measured non-evasively by electroencephalogram (EEG), electrocardiogram (ECG) and electromyogram (EMG). Dr. Aslam will report on the work to detect EEG signals, related to the states of attention and meditation, and EMG signals to actuate robotic limbs and LEGO robots. This work also explores the study of neural disorders such as ADD, ADHD, sleep disorders and Parkinson's.

Dr. Dean Aslam
Professor, Electrical
and Computer Eng.
Mich. State Univ.

The Post-Recession Job Market

The job market for engineers has changed significantly since 2009 and in ways no one expected. What's the new reality we're living in and what should an EE be thinking heading into the future? This presentation will sketch out a street-level view of the modern EE career.

Dan Trudeau
Sr. Staffing Consultant
The PRA Group, Inc.

Conference Website: www.ieee-sem.org/fall

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Call for Posters

All research faculty, professionals and students are invited to participate.

- Conference highlights the cutting edge research activities being pursued in Southeastern Michigan
- Showcase your research and network with people from Industry/Academia.
- Best poster awards for top posters presented as judged by the review committee.
- Poster topics related to any of the chapters/societies represented in the IEEE Southeastern Michigan Section (chapters tab at www.ieee-sem.org) are encouraged.
- Authors wishing to participate in the poster session must submit a poster title and abstract (less than 150 words) to Rajeev Verma (rajverma@ieee.org) by no later than October 25, 2013.
  - Suggested poster size should be less than 4 feet by 3 feet.
  - Authors will present their posters during the poster session from 5:00 PM to 6:30 PM

Registration

Register at the conference web site www.ieee-sem.org/fall

Conference Attendee Fees:

Students/Retired/Unemployed (Members)	$25
IEEE Members	$45
Non Members	$60
Student Dinner Table Sponsor (10 Students)	$250
Corporate Table Sponsor (8 Guests)	$250

Registration closes midnight October 30, 2013

Questions?

Conference Committee Contacts

Dr. Harpreet Singh, Conference Chairman ... .hsingh@eng.wayne.edu
Mohamad Berri, Ph.D. ... ...mberri@ieee.org
Scott Lytle ... ...scott@emcscoiety.org
Steve Romanowski ... ...stromanowski@ieee.org
Basil Sherlund ... .bsherlund@yahoo.com
Rajeev Verma ... ...rajeevverma@eaton.com

Conference Website: www.ieee-sem.org/fall

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Elections:

In order to facilitate as complete and fair election for our Section, the Nominations Committee is now conducting the 'search' for candidates for: **Affinity Groups** as well as all of our **Technical Society Chapters (#1-17).**

Note: Candidates must be active (paid up) members of IEEE as well as members of at least one of the Societies or Affinity Groups that compose the unit for which they are seeking election. (Section Executive Committee officers are not required to be members of any sub-unit.)

With a large and diverse Section such as Southeastern Michigan, keeping track of all candidates can be a major undertaking so this year we have designed an automated web-based Nominations tool to ensure we minimize any errors, and don't miss any candidate's requests.

Officer Positions for Nomination for Election:
For all of our Chapter and Affinity Groups, the following Officer Positions available for nomination for election:

> **Chair:**
> **Vice-Chair:**
> **Secretary:**
> **Treasurer:**

All other positions with the Section and its sub units are appointed.

Note: Detailed officer job descriptions are available through the IEEE Center for Leadership Excellence at:
http://ieee-elearning.org/CLE/

Each member wishing to be on the ballot for a particular officer position is requested to **submit their nomination** using our **Nominations Tool** at **https://ieee.fluidsurveys.com/s/sem/**. or mobile users QR scanner code:

Before you submit your nomination, it is advisable to go through the sample document at
IEEESEM_Nominations_Help.

As nominations are received and processed, we will update the Section Candidate Roster, located on the On-Line-Community election-nominations page to indicate the Candidates we have received, and verified for the office they wish to seek.

Important Dates:

Dates	Last day for Activity
11th Nov,2013	Accepting Nominations from General IEEE Section Members.
15th Nov – 1st Dec,2013	Ballot Voting on IEEE v-tools.
15th Dec 2013	Voting Results Officer Positions updated with IEEE HQ.

Current officers list can be downloaded from the SEM web page at:
http://sites.ieee.org/sem/files/2012/09/Officers_Roster_I EEE_SEM_2013_09_25.pdf.

For any questions please contact us at
ieee.nominations@gmail.com.

Regards

Chaitanya Setti
Chair,Nominations Committee,
IEEE Southeastern Michigan Section,
Ph: +1-3377660033

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Standing Committee(s)

Operations Committee:

The SEM Operations Committee serves as a "Think Tank" organization on behalf of the Section Executive Committee and is normally composed of Senior Officers of the Executive Committee of the Section. Its primary function is expressed in its Charter: "*This Task Force is charged to report to the Section Executive Committee with recommendations designed to improve the operations and activity levels of SEM operations.*"
(SEM Section Task Force Objectives" 6/5/2009, updated 9/6/2011)

Don Bramlett (Section Adviser) elaborates on a point while Jeff Dulzo (Chapter 1 Chair) on his right, and Kevin Taylor (Chair of Chapter 7) look on.

Meeting of the Operations Committee are conducted as teleconference, Google 'HangOut' or Face-to-Face (f2f) and rely on the background and experience of the officer members to provide insight into areas of Section activities where improvements in overall Section policy will aid and assist the Section to achieve the Section's Mission and Goals.

The most recent meeting was held on October 29th, and the accompanying photos show most of the officers present for this gathering.

The Committee has been 'dormant' since the first of the year, and this 'restart' meeting was intended to reaffirm both the Committee Charter (above) as well as its understanding of the overall Section Mission and Goals. Those Mission and Goals are:

Section Mission

Inspire – Enable – Empower and Engage Members of IEEE at the local level.
For the purpose of:

- Fulfilling the mission of IEEE (…**foster technological innovation and excellence for the benefit of humanity**.)
- Enhancing the members' growth and development throughout their life cycle
- Providing a professional home

Section Goals

- Increase member engagement,
- Improve relationships with and among members,
- Increase operational efficiency and effectiveness, within the section and its interfaces,
- Enhance collaboration – serve as the local face of IEEE to the community,
- Increase membership,
- Ensure the collection of appropriate information necessary to assist the IEEE to become a data driven organization.

Left to Right: Basil Sherlund (Chair Chapter 13), Chaitanya Setti (Director of Nominations) Qasim Chaudhary (Student Representative) and David Mindham (Assistant Secretary)

Attending this meeting were the Assistant Secretary, the Section Adviser, the Director of Nominations Committee, the Section Student Representative, Chairs of Chapters 1, 7 and 13, and the Past Section Chair. Additional input was provided by the Director of Communications and Marketing through e-mail.

Left to Right: Don Bramlett, Basil Sherlund and Chaitanya Setti. The "Chair" was not occupied for this photo.

Kimball Williams

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Affinity Group News:

Consultants Network Presents….Getting Started with Intellectual Property

The Consultants Network of Southeastern Michigan came together last month to socialize and learn about growing business through intellectual property. Guest speaker Michelle Knight of Young Basile Hanlon & MacFarlane P.C. (http://www.ybpc.com/michelleknight.html) gave a very poignant presentation on the basics of creating and managing a portfolio of intellectual property. Ms. Knight covered all major aspects of intellectual property including copyrights, trademarks, and patents.

Ms. Knight is an electrical engineer that practices mainly patent prosecution. She has extensive experience prosecuting patents involving software, semiconductors, sensors, motors, electronics and control systems. Ms. Knight also prepares clearance and infringement opinions in the area of electrical engineering.

In addition to the guest speaker, the group also introduced two regular spots that rotate among members, the Project Spotlight and Problem of the Day. The Project Spotlight highlights a recent successful project of a member while the Problem of the Day is a brainteaser intended to entertain while stimulating the mind. For the Project Spotlight, Chairperson Jacob Beningo presented his marketing project to drive traffic to his website and convert the traffic into leads. Secretary Jeff Beyer presented the Problem of the Day, "A Pile of Rocks." Guest, Ted Huff got the correct answer to the Problem of the Day almost immediately.

The Consultants Network of Southeastern Michigan is working hard to develop a group that brings clients and consultants together to learn and grow business. Currently, the group meets every other month over a casual dinner at the Elwell Grill

for Wednesday, November 20 and will feature guest speaker Greg Doyle from the Oakland County One Stop Shop Business Center. A definite must see event if you are interested in the free resources available to help develop and grow business in Oakland County. More information about the meeting can be found at the following link (https://meetings.vtools.ieee.org/meeting_view/list_meeting/21523). Or, please contact the Secretary of the group, Jeff Beyer, at Jeffrey.T.Beyer@ieee.org if you are interested in joining the group.

Jeff Beyer:
Consultants AG Secretary

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The Consultants Network of Southeastern Michigan gathered to learn about growing business through intellectual property. Seated from right to left (counter clockwise) are Harry Hill (Treasurer), Jacob Beningo (Chairperson), Michelle Knight (Guest Speaker), Jeff Beyer (Secretary), Kimball Williams, Carl Kolenda, Arun Hundiwal, Ted Huff, Stafford Cuffe, and Steve Hung

Future Plans

In future issues we hope to post information about many more diverse Section events, in addition to the current categories of SEM articles represented in this issue.

These would include:
Chapter News
Student Branch News
Executive Committee Activities
Personal Profiles
Section Wide Events
Membership Topics
Letters to the Editor, etc..

(A 'gasp from the past')
Who can tell us who, when and where of this photo?

We recognize that an effective newsletter cannot be the product of an editor, working in a vacuum. Relevant material (articles / photographs / copy / clips) must come from the Section officers, Committees, Chapters, Affinity Groups, Student Branches and Members.

Without constant and consistent information coming to the editor and his/her associates, the newsletter would become a solo voice, and its content would not have the lively interaction possible when multiple points of view are represented.

We all look forward to hearing from you, and to any contributions you would care to share with us all.

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Web & Social Sites:

http://sites.ieee.org/sem/

(Select the "SEM Calendar" button - top row.)

(Select the " " button under the top row.)

(Select the " " button under the top row.)

http://sem.oc.ieee.org/

'ExCom' Officers

Section Chair
Imad Makki

Section Secretary
Lora Schulwitz

Section Vice-Chair
Yi Lu Murphey

Section Treasurer
Praveen Kumar

Section Adviser
Don Bramlett

Dir-Communications & Marketing
Robert Neff

Dir-Conferences
Steven Romanoski

Dir-Educational Activities
Ali Eydgahi

Dir-Finance
Bassel Atallah

Dir-Membership
Mohamad Berri

Dir-Nominations
Chaitanya Setti

Dir-Technical Activities
Kimball Williams

Dir-Professional Activities
Anthony DAmato

Dir-Student Activities
Raju Brahmandhabheri

Student Representative
Qasim Chaudhary

Jr. Past Section Chair
Kimball Williams

Sr. Past Section Chair
Randy Stevenson

IEEE Southeastern Michigan

Visit Us on the Web at:
http://sites.ieee.org/sem/

Scheduled SEM Meetings

All IEEE members are welcome to join us at any regularly scheduled meeting:

SEM Executive Committee Monthly Teleconferences:
- 1st Thursday of Each Month @ Noon
- Check the Section Web Calendar at:
  http://sites.ieee.org/sem/
  (Select the "SEM Calendar" button in the top row.)

SEM Executive Committee Face-to-Face Meetings:
- 1/Qtr. Usually held at U/M-D Fairlane Center
- Registration at:
  https://meetings.vtools.ieee.org/main

SEM Standing Committee Meetings:
SEM Affinity Group Meetings:
SEM Technical Chapter Meetings:
SEM University Student Branch Meetings:
- Schedule announced on SEM Web Calendar
  http://sites.ieee.org/sem/
  (Select the "SEM Calendar" button in the top row.)

- Registration for all at:
  https://meetings.vtools.ieee.org/main