Key Note Address: The Future Starts Here…..

Sonya F. Sepahban
Senior Vice President
Engineering, Development & Technology
General Dynamics Land Systems

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.

As senior Vice President for Engineering, Development and Technology. Sonya is responsible for executing military ground vehicle technical solutions to enhance war fighting capability.
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

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

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 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

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.

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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

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.

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

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.

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

Cultural Entertainment
Indian Classical Dance
9:00 – 9:15 PM
Following Keynote Presentation
Vidyanjali Dancers
Bharatha Kala Shreshta
Sadhu Chandrasekhar

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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

The early price deadline is November 1, 2013.

Conference Attendee Fees: ........................................ Early / Late
Students/Retired/Unemployed (Members) ........................................ $25 / $35
Members ................................................................................ $45 / $60
Non Members ................................................................. $60 / $70
Student Dinner Table Sponsor .................................................. $250

Questions?

Conference Committee Contacts

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