



## **IEEE NEWS FOR OCTOBER 2008**

**Jacob Z. Schanker, P.E., Newsletter Chair**  
**Rochester IEEE home page at: <http://www.r1.ieee.org/~roch>**

### **Rochester Section Meeting Tuesday, October 7, 2008**

The next Rochester Section business meeting is on Tuesday, October 7, 2008 at Noon, at the Shanghai Restaurant, 2920 West Henrietta Road, just south of the intersection with Brighton-Henrietta Town Line Road. All IEEE members are welcome to attend this meeting, meet your officers and have lunch for just \$3.00.

### **Rochester Section 2009 Officer Nominations**

The nominations committee presented the following nominations for our officer in 2009. These have been approved by the Executive Committee.

Chair:	Paul Lee
Vice-Chair:	Alex Loui
Treasurer:	Bill Fowlkes
Secretary:	Nirmala Shenoy
Development & Awards:	Jim Ziobro

These represent the elective offices in the Rochester section. Other Executive Committee positions are filled by appointment of the Chair, with the approval of the Excom.

Our bylaws also allow for nominations for section officer positions to be made by petition, which must be received by November 1, 2008. To be valid, nominating petitions must be signed by twelve or more Rochester Section members of member grade or higher. Petitions may be mailed to the IEEE Rochester Section, c/o RES, 150 State Street, Rochester, NY 14614

If no valid petitions are received, the election will be by voice vote at the December 2, 2008 Section meeting. If any valid petitions are received, the election will be by mailed ballot sent to all members in the Rochester Section eligible to vote. A ballot included with the Rochester Engineer mailing fulfils this requirement. Officers begin their terms on January 1, 2009.

Society chapters should also be holding their elections for 2009 officers. In the case of chapters, any member of that society interested in running for a position is eligible to be placed on the ballot for that society chapter election. If there is more than one candidate for any elected position, the election must be held by mailed ballot sent to all local members of that society. When there is only one candidate for all offices, the election is held at a society chapter meeting by voice vote.

## **GRSS and SPS Joint Meeting on October 9**

The Rochester area chapters of the IEEE Geoscience and Remote Sensing Society and the Signal Processing Society jointly present a technical seminar on Physics-based Target Detection: Analysis and Validation on an Airborne Hyperspectral Data Set. Presenting will be Stefania Matteoli.

Date: Thursday, October 9, 2008

Time: Pizza and soda provided at 5:30 PM. Meeting and Presentation at 6:00 PM

Location: Carlson Learning Center (Room 1275), Chester F. Carlson Center for Imaging Science (Building 76), Rochester Institute of Technology

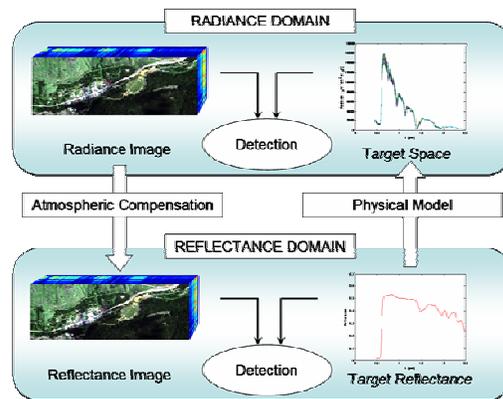
Abstract: Target detection algorithms for hyperspectral images have been widely investigated and have proven valuable in many remote sensing applications. Typically, these algorithms are applied to an atmospherically-compensated reflectance image, since the target of interest is often specified by its spectral reflectance. Recently, physics-based approaches have been developed that allow these algorithms to be applied directly in the radiance domain. These approaches use a “target-space” which is defined by the generation of a range of possible sensor-reaching radiances for a given target spectral reflectance under a variety of illumination and atmospheric conditions. Physics-based target detection can be more efficient since it does not require the image be atmospherically compensated. However, whereas the generation of target spaces has been widely investigated, there has been relatively little work on the performance evaluation of different algorithms in the radiance domain compared to their typical application in the reflectance domain.

This presentation will report on an extensive analysis of physics-based target detection that has been carried out on a hyperspectral data set acquired by the airborne 126-band HyMap sensor over a complex rural scenario in Montana. A description will be provided of how the target-space was generated from analysis of the available information regarding the scene, sensor, data acquisition and atmospheric conditions. Next, the validation of the target-space obtained will be considered. Finally, the detection performance in both domains will be discussed with a focus on the strengths and weaknesses shown by the various geometrical and statistical detection algorithms considered.



**(a)**

*(a) True Color representation of the hyperspectral image analyzed; (b) Comparison of target detection schemes..*



**(b)**

Biography: Stefania Matteoli is a Remote Sensing Ph.D. student at the Department of Information Engineering, University of Pisa, Italy. She is currently a visiting scholar in the Chester F. Carlson Center for Imaging Science at the Rochester Institute of Technology (RIT). She received her B.S. and M.S. in Telecommunications Engineering from University of Pisa, Italy. Her main research interests include signal processing for multi/hyperspectral images exploitation and anomaly and target detection in remotely sensed images. Her current research at RIT focuses on target detection in the radiance domain by the employment of physics-based models.

### **32nd Annual EDS/CAS Activities in Western NY Conference**

The focus of this conference is to bring engineers and researchers together to share information on a wide variety of topics related to microelectronic devices and systems, allowing one to become acquainted with others of similar interest in nearby locations. This year the conference will be held on November 5 at R.I.T. The conference begins with a morning workshop at 8 AM. Oral presentations begin at 11AM, including two invited talks and six contributed talks. There will be a noon lunch, and an afternoon coffee break. A poster session reception will follow the contributed talks. See the conference website listed below for the latest updated information.

Abstracts are being solicited for contributed talks and poster presentations, especially those which promote research and development activity in Western New York consisting of the greater Buffalo, Rochester, Ithaca and Syracuse areas. Abstracts must be received by October 17<sup>th</sup> for contributed talks, and by October 24<sup>th</sup> for posters. Submission can be done electronically via email to [kdhemc@rit.edu](mailto:kdhemc@rit.edu) using MS-Word or PDF formats.

Visit the conference website for current details: <http://www.rit.edu/kgcoe/ue/eds.php>

## **IEEE NY Workshop on Communications, Sensors, and Networking**

The IEEE NY Workshop on Communications, Sensors, and Networking '08 will be held on Friday, November 21, 2008 from 8:30 AM to 5:00 PM in the Golisano Auditorium at the Rochester Institute of Technology. This is the fourth such annual event.

Distinguished speakers will be presenting morning and afternoon sessions with topics covering research and application of emerging communications technology to an audience representing academic, commercial and government interests from New York.

The Joint Chapter for Aerospace and Communications Society of the IEEE Rochester, NY section is organizing this workshop, and we encourage communications and networking related companies and sponsors to join and contribute to the event.

This can be done by participating or providing financial or material contributions in the following manners: •Making a featured presentation at the event. Several 15-20 minute presentations will be selected for presentation with others included for poster boards in the Exhibit area. •Using one of the table booths in our Exhibit area to represent your company with literature and representatives. •Underwriting the costs of lunch, beverages or break snacks. •Providing supplies/services for our registration hand-out packet. Typical items would be pens, note pads, ID badges, lanyards, proceedings reproduction.

Sponsor company contributions will be acknowledged by including the name and logo of sponsor companies on our Workshop web page, Final Program and Proceedings.

The IEEE, Joint Chapter for Aerospace and Communications Society and this Workshop event are non-profit. Any support that we receive will be used for: •Breakfasts, coffee-breaks and lunch during the Workshop. •Reproduction/ mailing costs associated with printing abstracts, proceedings, programs and event marketing material. •Fees to cover specialized venue costs- tables, linen, catering, security, parking. Excesses, if any, would be used to offset the expenses of the next annual workshop.

If your company is interested in sponsorship participation, please contact Nirmala Shenoy, B. Thomas Golisano College for Computing and Information Sciences, Rochester Institute of Technology, Rochester, NY 14623  
Email: [nxsvks@rit.edu](mailto:nxsvks@rit.edu)

Attendee Workshop pre-registration ends on October 15. See the workshop web page at [http://ewh.ieee.org/r1/rochester/comm\\_aero/workshop/](http://ewh.ieee.org/r1/rochester/comm_aero/workshop/) for current details and registration information.

## IEEE Computer Society Meeting October 30

John Harauz will be speaking on Engineering Considerations in the System Lifecycle: Standards and Hazards Analysis.

Time: 6:00 PM

Date: Thursday, October 30, 2008

Place: R.I.T., Building 70 (Golisano College), room 2400

### Abstract:

Developing safety-critical systems containing software is an inherently risky proposition. A safety case is usually required to present a clear, comprehensive and defensible argument that a system including software is acceptably safe to operate in a particular context. Software alone is not a safety issue; it is only an issue in the context of the larger system. Safety is achieved by reducing risk to a tolerable level through an iterative process of risk assessment and risk reduction (hazards analysis). Hazard identification begins with preliminary hazards analysis as early as the conceptual development of the system and continues through the development lifecycle. There are many techniques to support hazards analysis; some of the most commonly used being Fault Tree Analysis and Failure Mode and Effect Analysis, which are also applicable to software.

This presentation will specifically address:

- what a safety case is
- how risk management and hazards analysis fit into a system development life-cycle
- the hazards analysis process and supporting hazards techniques
- limitations of the software development process
- planning issues for safety-critical system development
- the latest International IEEE standards and sector-specific standards applicable to safety-related software, including
  - ISO 14971:2005 Medical Devices - Application of risk management to medical devices
  - IEC 62304:2006 Medical device software – Software life cycle processes).

John Harauz is an internationally recognized authority on system engineering and software engineering standards for safety-related computer systems, including the regulatory licensing of such systems. He belongs to the Computer Society Standards Activities Board and the Professional Practices Committee, serves as column editor of the Computer Magazine Standards Column, and on the editorial committee for “IEEE Security and Privacy, Building Dependability Reliability and Trust”. John is a founding member of the new Technical Committee on Safety of Systems under the IEEE Systems Council. He is currently organizing the Second IEEE International Workshop on Safety of Systems (IWSS’08), which is to be held as an integral part of the International Conference on Prognostics and Health Management 2008 (PHM08) sponsored by the IEEE Reliability Society.

## **Program Evaluators for Accreditation Activities Sought**

The IEEE Educational Activities Board (EAB) seeks qualified professionals from industry, government and academic sectors to serve as Program Evaluators to assist in accrediting Engineering and Engineering Technology Programs at USA colleges for the Engineering Accreditation Commission (EAC) and the Technology Accreditation Commission (TAC) of ABET, Inc.

Service as a program evaluator provides the opportunity for members of the profession to contribute to the achievement of high quality educational standards of engineering and engineering technology programs.

IEEE evaluator candidates are required for the following ABET-accredited programs:

- Computer Engineering and Computer Engineering Technology
- Electrical Engineering and Electrical and Electronic Engineering Technology
- Electro-Mechanical Engineering Technology
- Information Engineering Technology
- Telecommunications Engineering Technology

Participation in the accreditation process by industry professionals will ensure that the requirements of industry are addressed.

Applications must be submitted on the ABET website no later than November 14, 2008 for the 2009-2010 academic year. Applications are reviewed during the February 2009 IEEE meetings. Accepted or declined notification will be sent to the applicants by March 1, 2009.

Nomination forms and a link to the Application form on the ABET website are available at: <http://www.ieee.org/portal/pages/education/apc/ceaa/eacinfo.html> for people interested in engineering, or at <http://www.ieee.org/portal/pages/education/apc/ctaa/tacinfo.html> for those interested in engineering technology.

To submit nominations or request information contact Carolyn Solimine at 732 562 5484 or [c.solimine@ieee.org](mailto:c.solimine@ieee.org) or [eab-accred@ieee.org](mailto:eab-accred@ieee.org). To fill out and submit applications, please visit the ABET website at: <http://www.abet.org/volunteer.shtml>