The IEEE Newsletter

PUBLICATION OF THE NORTH JERSEY SECTION OF THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

NORTH JERSEY SECTION CELEBRATES 50 YEARS!

North Jersey SMC Society:

Digital Processing of Kirlian Images

On Tuesday, November 23, 2004, the NJ Systems, Man and Cybernetics (SMC) Chapter will host a talk on "Digital Processing of Kirlian Images." The speaker will be Xanadu Halkias.

About the Talk

In 1890, while experimenting with the mysteries of electricity, the renowned engineer, Nikola Tesla, became the first person to obtain a partial imprint of the electromagnetic field surrounding all objects, referred to as their "auras." Fifty years later, two Russian scientists, Semion and Valentina Kirlian, developed a practical way of capturing auras. The process is known today as Kirlian photography and is recognized both for its artistic appeal as well as for its controversial role as a diagnostic tool.

Unfortunately, most research on Kirlian photography deals with the origin, means of capture, and interpretation of the images without the aid of an automated approach. The idea behind this talk is to use image-processing techniques to provide some insight into whether and how the existing practice might be amenable to a mathematical/ computational process. As discussed, by a careful choice of descriptive features, a "diagnostic" system can be trained based on the presentation of a Kirlian image. The desired characteristics can be subsequently classified into three categories: size, color, and morphology. In the speaker's implementation, these categories are represented by the extraction of so-called "Regions of Interest" using Watershed segmentation and the computation of salient features using texture and curvature analysis. This provides a novel, first approach to the analysis of Kirlian images using the tools provided by the broader field of Computer Vision.

About the Speaker

Xanadu Halkias is currently pursuing advanced studies at Columbia University in signal processing and statistical pattern recognition. She received her MS degree from National Technical University of Athens, Greece. Her thesis, Digital Processing of Kirlian Images, was completed under Professor Petros Maragos in 2002, along with the companion paper which appeared at the 2004 International Conference on Signal Processing in Beijing.

All Welcome!

You need not be a member of IEEE to attend, and there is no charge for admission. Light refreshments will be served starting at 6:45 PM.

Time: 7:00 PM (light refreshments at 6:45 PM), Tuesday, November 23, 2004.
Place: Clifton Memorial Library, 292 Piaget Ave, Clifton, NJ, (973) 772-5500. (main floor; left turn from entrance & proceed to conference room).
Information/RSVP: Dr. Mike Liechenstein, (973) 471-0721, (m.liechenstein@ ieee.org). Please also check electronic newsletter for any possible changes in room, etc.

The NJ Section Education Committee Requests Your Feedback

The IEEE North Jersey Section has been helping fellow engineering professionals for the last fifty years. The Education Committee has successfully conducted software and engineering training courses over the last few decades. The Committee is committed to professional development of the members and the instructors for the courses are very qualified and experienced in their respective fields. Classes are arranged on weekday evenings or on Saturdays provided at least fifteen candidates are available. Completion certificates are issued by IEEE Headquarters with CEU credits for the number of training hours.

Due to the slow growth of the economy and several other factors, registration for these courses has diminished over the last few years. I would urge members to send their feedback regarding what courses they would be interested in, the format, location, and day/time, etc., by email to b.chivakula@computer.org.

Regards,
Bhanu Chivakula
Chair, Education Committee
Vice Chair, IEEE North Jersey Section