IEEE Madras Section
In association with
IEEE Madras Young Professional Affinity Group
IEEE Professional Communication Society, Madras Chapter
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Cordially invite you to a session on

"Imaging Arithmetic: Physics U Math > Physics + Math"

by

Prof. Gaurav Sharma

Department of Electrical and Computer Engineering, University of Rochester, USA

On Wednesday, 19th August 2015 at 6.00 PM
at
Alumni Hall, Anna University, Guindy.

Dr. Alamelu Chairperson, IEEE Madras Section	**Mr. H.R. Mohan** Chairman IEEE CS & PCS	**Dr. Vydeki Vijayakumar** Technical Meet In-charge IEEE Madras Section	**Prof.S.Elangovan** Chairman IEEE Madras YP

Programme: 5.30: High Tea & Networking:: 6.00: Presentation :: 7.45: Dinner

Abstract: For several real-world problems, signal and image processing approaches are most successful when they combine the insight offered by the physics underlying the problem with the mathematical framework and tools inherent in digital signal and image processing. Electronic imaging systems are a particularly fertile ground for problems in this class because they deal specifically with the capture of physical scenes and with the reproduction of images on physical devices. In this presentation, we highlight specific examples of problems in electronic imaging for which the combination of physical insight, mathematical tools, and engineering ingenuity leads to particularly elegant and effective solutions. We illustrate the above ideas in some depth using a number of case studies drawn from our research in electronic imaging, in each case highlighting how the combination of physical modeling/insight with mathematical analysis enables solutions that each of these tools alone is unable to address adequately. The examples cover a wide range of applications, including methods for show-through cancelation in scanning, color barcodes for mobile applications, print watermarks detectable by viewers without using any viewing aids, multiplexed images that revealed under varying illumination, improved metrics for the accuracy of color capture devices, and color halftone separation estimation from scans.

Bio: Gaurav Sharma is a professor at the Electrical and Computer Engineering Department at the University of Rochester, where, from 2008-2010, he also served as the Director for the Center for Emerging and Innovative Science (CEIS), a New York state funded center located at the University of Rochester chartered with promoting economic development through university-industry technology transfer. He received the PhD degree in Electrical and Computer engineering from North Carolina State University, Raleigh in 1996. From 1993 through 2003, he was with the Xerox Innovation group in Webster, NY, most recently in the position of Principal Scientist and Project Leader. His research interests include color science and imaging, multimedia/print security, and bioinformatics areas in which he has 49 patents and has authored over a 150 journal and conference publications. He is the Editor-in-Chief for the Journal of Electronic Imaging and the editor of the Digital Color Imaging Handbook published by CRC press in 2003. He is a member of the IEEE Publications, Products, and Services Board (PSPB) and, in the past, has served as an associate editor for the Journal of Electronic Imaging, the IEEE Transactions on Image Processing, and for the IEEE Transactions on Information Forensics and Security. Dr. Sharma is a fellow of the IEEE, a fellow of SPIE, a fellow of the Society for Imaging Science and Technology (IS&T) and has been elected to Sigma Xi, Phi Kappa Phi, and Pi Mu Epsilon. In recognition of his research contributions, he received an IEEE Region I technical innovation award in 2008.

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