

Where Industry and Academia Meet

Join us

EI02: ADVANCED IMAGE ENHANCEMENT AND DEBLURRING**Instructor:** Majid Rabbani, Consultant (US) | **Sunday January 28, 8:00 AM – 12:15 PM****Course Level:** Advanced | **Fee:** Member: \$275/ Non-member: \$300 / Student: \$95 (*prices for all increase by \$50 after January 8, 2018)

This course presents some of the advanced algorithms used in contrast enhancement, noise reduction, sharpening, and deblurring of still images and video. Applications include consumer and professional imaging, medical imaging, forensic imaging, surveillance, and astronomical imaging. Many image examples complement the technical descriptions.

Benefits:

- Understand advanced algorithms used for contrast enhancement such as CLAHE, Photoshop Shadows/Highlights, and Dynamic Range Compression (DRC).
- Understand advanced techniques used in image sharpening such as advanced variations of nonlinear unsharp masking, etc.
- Understand recent advancements in image noise removal, such as bilateral filtering and nonlocal means.
- Understand how motion information can be utilized in image sequences to improve the performance of various enhancement techniques.
- Understand Wiener filtering and its variations for performing image deblurring (restoration).

Intended Audience: Scientists, engineers, and technical managers who need to understand and/or apply the techniques employed in digital image processing in various products in a diverse set of applications such as medical imaging, professional and consumer imaging, forensic imaging, etc. will benefit from this course. Some knowledge of digital filtering (convolution) and frequency decomposition is necessary for understanding the deblurring concepts.

Instructor: **Majid Rabbani** has more than 35 years of experience in digital imaging. After a 33-year career at Kodak Research Labs, he retired in 2016 with the rank of Kodak Fellow. Currently, he is a visiting professor at Rochester Institute of Technology (RIT). He is the co-recipient of the 2005 and 1988 Kodak C. E. K. Mees Awards and the co-recipient of two Emmy Engineering Awards in 1990 and 1996. He has 44 issued US patents and is the co-author of the book *Digital Image Compression Techniques* (1991) and the creator of six video/CDROM courses in the area of digital imaging. Rabbani is a Fellow of SPIE and IEEE and a Kodak Distinguished Inventor. He has been an active educator in the digital imaging community for the past 31 years.

SYMPOSIUM PLENARY TALKS

Monday: Overview of Modern Machine Learning and Deep Neural Networks – Impact on Imaging and the Field of Computer Vision, **Greg Corrado, co-founder of Google Brain and Principal Scientist at Google**

Tuesday: Fast, Automated 3D Modeling of Buildings and Other GPS Denied Environments, **Avideh Zakhor, Qualcomm Chair & Professor at UC Berkeley**

Wednesday: Ubiquitous, Consumer AR Systems to Supplant Smartphones, **Ronald T. Azuma, Intel Labs Researcher and Augmented Reality Pioneer**

SYMPOSIUM HIGHLIGHTS

- 18 conferences featuring 30 keynote talks by world reknown experts
- 3D Theatre
- Tours of Stanford University Labs
- Industry Exhibition
- Meet the Future: Showcase of Student and Young Professional Research
- Demonstration Session
- Poster Session
- Welcome Reception
- Women in Electronic Imaging Breakfast
- Human Vision in Electronic Imaging 30th Year Banquet

To register or learn more, visit
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