

**University of Rochester
Department of Electrical and Computer Engineering
Colloquia Series**

Multi-spectral Imaging under Passive Illumination and Active Illumination

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Professor**

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Wednesday, September 5th

**11:00 AM – 12:00 PM
Computer Studies Building (CSB) 209**

Abstract: Spectral imaging technology is a useful technology that is now widespread in all fields related with visual information. A variety of multi-spectral imaging systems have been proposed for acquiring spectral information from a scene. Conventional spectral imaging systems are mostly constructed by multi-band imaging devices with different filtration mechanism at the sensor side under passive illumination. On the other hand, the active spectral imaging method has the possibility of recovering spectral reflectance information of object surface in high speed. In this talk, first, I will briefly review a variety of multi-spectral imaging systems. Second, I will describe a passive spectral imaging method for analyzing omnidirectional color signals in a natural scene. The imaging system is easily realized with a trichromatic digital camera, a fisheye lens, and color filters. Third, I will introduce a spectral imaging method using an active spectral illumination for finding effective applications in a variety of fields including color engineering, computer vision, and imaging industry. The imaging system is constructed by synchronizing a programmable light source and a high-speed monochrome camera.

Bio: Shoji TOMINAGA is a professor at Graduate School of Advanced Integration Science, Chiba University. He is also a Dean of Graduate School of Advanced Integration Science. His research interests include color imaging, illuminant estimation, multispectral image analysis, and color image rendering. He is an editorial board member of Color Research and Application, an associate editor of the Journal of Electronic Imaging, an executive committee member of International Colour Association (AIC), and co-chair of the Computational Color Imaging Workshop (CCIW). He is a Fellow of IEEE, IS&T, and SPIE.

Light refreshments will be provided.