

# IEM SEMINAR SERIES

TUESDAY

NOVEMBER 24<sup>th</sup>, 2015

## Visual Attention in Humans and Computers



Institute for  
Engineering in Medicine

UNIVERSITY OF MINNESOTA

Driven to Discover<sup>SM</sup>

### DR. QI ZHAO

Assistant Professor

Department of Electrical and Computer Engineering

Department of Ophthalmology

National University of Singapore



FREE event, no registration  
required.

Pizza and drinks will be  
provided.

12:00PM - 1:00PM

Nils Hasselmo Hall  
Room 4-101

For additional information on  
Dr. Zhao's presentation,  
please contact:  
[scot0353@umn.edu](mailto:scot0353@umn.edu)

The Institute for Engineering in Medicine (IEM) is pleased to announce the upcoming IEM Seminar by Dr. Qi Zhao, "Visual Attention in Humans and Computers".

Dr. Zhao will present her "SALICON" project. First, she will introduce new attention datasets with rich semantics along with machine learning models to characterize the complex stimuli. The combined data- and model-driven approach allows quantifying behavioral differences in attention allocation with multiple clinical groups. As an example, Dr. Zhao will elaborate findings that use the data and models to decipher the neurobehavioral signature of autism. She will then demonstrate an innovative psychophysical method to enable large-scale collection of attention data. She envisions that big attention data can advance the understanding of attentional mechanisms as well as psychological processes that result in individual differences and deficits in clinical populations. Next, she will present her deep learning based model that effectively bridges the "semantic gap" in predicting where people look at. The model effectively highlights semantic objects without any pre-trained detector, and shows a big leap towards human performance. Live demos will be shown to illustrate experimental results.

Dr. Zhao is the principal investigator at the Visual Information Processing Lab. Dr. Zhao received the MSc and PhD degrees in computer vision and machine learning from the University of California, Santa Cruz, in 2007 and 2009, respectively. Prior to joining NUS, she was a postdoctoral researcher in the Computation & Neural Systems, and Division of Biology at the California Institute of Technology from 2009 to 2011. Her main research interests include computational and cognitive vision, machine learning, and big data analytics. Dr. Zhao has published more than 30 journal and conference papers in top computer vision, cognitive neuroscience, and machine learning venues, and edited a book with Springer, titled Computational and Cognitive Neuroscience of Vision, that provides a systematic and comprehensive overview of vision from various perspectives, ranging from neuroscience to cognition, and from computational principles to engineering developments.

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