

Joint Symposium eMDC-2017 & ISSM-2017

Invited Speech: **“What is Deep Learning, and how can it help me?”**

Deep Learning algorithm design and validation, with applications for semiconductor industry



Dr. John Wang

*Industry Manager,
Communications, Electronics, and Semiconductors
Industries
MathWorks, Inc., USA*

About the Speaker

John Wang is an industry marketing manager at MathWorks responsible for the communications, electronics, and semiconductor segments. Prior to joining MathWorks, John managed the Wi-Fi product line in Quantenna Communications (NASDAQ: QTNA) and the Internet of Things (IoT) business at Ozmo Devices (acquired by Atmel). John holds a Ph.D. in electrical engineering from University of California with over 40 publications, and a bachelor's degree in electrical engineering from Peking University. He is the recipient of the IEEE Fred W. Ellersick Award for Best Unclassified Paper at MILCOM 2008 and is an IEEE senior member.

Abstract

Over the past five years, deep learning has become a pervasive technology in a variety of applications including autonomous systems, predictive analytics, and e-manufacturing. The growth of deep learning adoption has been driven by fast computational platforms such as GPUs for training, availability of massive data sets, and the utilization of pre-trained models for new applications. In this presentation, we will discuss and demonstrate the state of the art tools and workflows for deep learning algorithms including convolutional neural networks, transfer learning with reference models, detection, and classification. We will present some recent examples of application of these technologies for improving semiconductor manufacturing workflow.