e-Manufacturing & Design Collaboration 2016

Tutorial:

Case Studies of Machine Learning for Manufacturing Intelligence

Prof. Roger J-S. Jang

Professor, Department of Computer Science &

Information Engineering

About the Speaker

Professor J-S. Jang, his expertise at music analysis and retrieval, speech recognition/scoring/synthesis, machine learning, neural networks and fuzzy logic. He also co-works with many semiconductor manufacturing companies to improve their process optimization by using machine learning and neural networks technologies.

He worked for MathWorks and Department of Computer Science of National Tsing Hua University prior to join NTU. He focuses on audio signal as well music recognition technologies, also authorized the technologies to many international companies. The citations of Professor Jang at Google has over 30,000. Personal website: http://mirlab.org/jang.

Abstract

This talk focuses on case studies of using machine learning for semiconductor manufacturing intelligence. In particular, we shall introduce three important tasks in semiconductor manufacturing, including wafer map classification, depth reconstruction via SEM images, and predictive maintenance. We shall explain how to apply machine learning to such tasks, including feature extraction, model selection, input selection/extraction, and performance evaluation.