SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
Faculty of Engineering
Website: https://www.eng.nus.edu.sg/ece/

Area: Control, Intelligent System and Robotics

Host: Assoc Prof Prahlad Vadakkepat

TOPIC	**:**	**A Layer-Wise Neural Network Model For Multi-Item Single-Output Quality Estimation**
SPEAKER	**:**	**Mr Naveen John Punnoose** **Graduate Student, ECE Dept, NUS**
DATE	**:**	**Friday, 16 July 2021**
TIME	**:**	**10.00AM to 10.30AM**
WEBINAR	**:**	**Join Zoom Meeting** **https://nus-sg.zoom.us/j/85360448848?pwd=TjB6b1dkRmhuNURTclF6b2o0MHZkZz09** **Meeting ID: 853 6044 8848** **Passcode: 492425**

ABSTRACT

In high volume production processes such as injection molding, inline inspection of parts is generally not feasible due to additional sensor requirements and short production cycles. Production facilities often inspect for defective parts at the lot-level after multiple production runs and not for each run. This data structure makes it distinct from the standard single-item single-output classification problem found in quality estimation. A layer-wise neural network architecture is proposed for classification of time series data where multiple instances have a single output. The model uses a separation of layers within its architecture to extract relevant features for each run. It is evaluated using data from injection molding and wafer testing applications in the semiconductor industry, and benchmarked against a previously proposed unsupervised probability matching model (DTW-KNN)

Mr. Naveen John Punnoose is PhD student at the National University of Singapore since 2016. He completed his B.S. and M.S. degrees in Mechanical Engineering from Purdue University, U.S.A, in 2012 and 2014 respectively. His current research involves development of machine learning and deep learning based models for failure prediction and quality estimation using industrial data.