NATIONAL UNIVERSITY OF SINGAPORE

School of Computing

C S S E M I N A R

Title:　　　　**Automated Design Appraisal (Case Study: Piping)**

Speaker:　　　Mr Wei Chian Tan
　　　　　　　Research Engineer
　　　　　　　Lloyd's Register Global Technology Centre, Singapore

Date/Time:　　26 October 2016, Wednesday, 04:00 PM to 05:00 PM

Venue:　　　　I3-03-49 - Meeting Room 9 @ ICube

Chaired by:　　Dr Bressan, Stephane, Associate Professor, School of Computing
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Abstract:

Design appraisal (evaluation of engineering design) is an important task in marine and offshore industry. However, this process is heavily dependent on expert's knowledge and experience. This talk will cover a machine learning based approach proposed for automated evaluation of a design. Using piping as a case study, designs are provided to linear Support Vector Machine (SVM) for learning and developed system is tested using unseen designs. Besides, huge amount of design in the industry is still handled in raster form. For storage and further analysis, raster to vector conversion of piping design becomes necessary. As first step towards vectorisation, Local Binary Pattern (LBP) and Spatial Pyramid Matching (SPM) based approach is developed for symbol recognition in piping design. This project has led to two accepted papers in IEEE Conference on Automation Science and Engineering (CASE) 2016.

Biodata:

Wei Chian is a research engineer at Lloyd's Register Global Technology Centre Singapore and a PhD student under Industrial Postgraduate Programme (IPP) in Nanyang Technological University (NTU), Singapore. After receiving B.Eng. (Mechanical) from NTU in 2008, he has been working in both academic and industry on research of computer vision, machine learning and process automation. He completed M.Eng. (Computer) in 2012.