UW CENTER FOR
PATTERN ANALYSIS AND MACHINE INTELLIGENCE

GRADUATE SEMINAR SERIES

A Novel Approach for Performance Assessment of Human-Robotic Interaction

Speaker: Jamil Abou Saleh

Date: March 14, 2012

Time: 4:30 pm – 5 pm

Place: E5 (5128) Refreshments will be served

Abstract :

Many systems have been implemented to achieve intelligent functions that require high-level interaction with a human user. Therefore, presenting a quantitative measure of such performance is crucial. This work intends to identify common performance metrics for task-oriented human-robot interaction. We present a methodology to assess the system performance of a human-robot team in achievement of collective tasks. Toward this end, we determine the true time that an operator has to dedicate to a robot in action. We define the robot attention demand (RAD) as a function of both direct interaction time (DIT) and indirect interaction time (IIT), where the IIT is a direct consequence of the human trust in automation. Human reliability and ability to handle the increased task complexity and number of robots is also addressed. The model is then generalized to accommodate multi-robot scenarios. Sequential and parallel robot cooperation schemes with varying levels of task dependency are considered. considered.

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