

# UW CENTER FOR PATTERN ANALYSIS AND MACHINE INTELLIGENCE (CPAMI) GRADUATE SEMINAR SERIES

## Target-to-Sensor Allocation Based on Distributed Constraint Optimization for Large-scale Sensor Networks

**Speaker:** Samaneh Hosseini Semnani

**Date:** February 15, 2012

**Time:** 4 pm- 4:30 pm

**Place:** E5 (5128) Refreshments will be served

### **Abstract :**

A key challenge in large and dynamic sensor networks is to make most efficient use of available sensors to collect the most complete and significant information about the objects in a given volume of interest. This describes the sensor management problem. Target-to-sensor allocation is one of the main parts of the sensor management which deals with a selection process that involves assigning targets to a set of sensors. This selection process is a combinatorial optimization problem in which some sensors, targets and constraints are given and the goal of the system is to minimize constraint violation costs. This problem is an NP-hard one which requires high computational and communicational efforts, especially in large and dynamic sensor networks. There is a major lack of a general and efficient approach to deal with this problem in the literature. This work introduces a solution for the problem based on the Distributed Constraint Optimization Problem (DCOP) which is both general and efficient especially in large and dynamic sensor networks.