

## **COURSE ANNOUNCEMENT**

### **Vision Sensor Networks Lab**

**EE 392Y**

**3 Units, Winter Quarter 2007**

**Wed 2:15-4:05 Bldg. 380, Room 380D**

**Instructor: Hamid Aghajan [[aghajan at stanford](mailto:aghajan@stanford.edu)]**

This course offers a distributed processing perspective to application design in vision-based sensor networks, an area increasingly recognized as the enabler of next generation network-based solutions for smart environments. Networked image sensors provide opportunities for disruptive change of paradigm in designing vision-based algorithms by allowing data fusion across multiple views. Research in the field is rapidly expanding on the premise of harvesting the concepts and technologies in wireless communications, efficient image sensing, and embedded and distributed vision processing algorithms. The course covers the fundamental principles of the operation of wireless sensor networks and focuses on novel algorithm design methodologies for distributed vision processing. Collaborative and layered algorithmic architectures enabling the effective fusion of data across space, time, and feature levels will be examined.

The course provides the opportunity to work on term projects defined based on some of the most interesting and novel applications of vision sensor networks for smart environments, such as assisted living, monitoring networks, and human gesture and face analysis. The research activities at the WSNL (<http://wsnl.stanford.edu>) in the mentioned areas will provide the essential background and insight about the different aspects of application design based on shared vision-based reasoning among the network nodes.

The course will be offered for 3 units which will be letter graded based on a term project. Students taking the course are expected to have completed at least one course in each of the following areas:

- Communications: EE359 or EE279 or EE179 (or equivalent)
- Signals and systems: EE261 or EE278 or EE263 (or equivalent)

Programming experience in C and Matlab is expected for conducting the term project. Interested students, including those who may have questions about the requirements, can contact the instructor at [[aghajan at stanford](mailto:aghajan@stanford.edu)] for consultation.