866 Multisensor Integration for Intelligent Systems

Catalog Description
Physical sensing devices, multisensor interface, sensor data fusion, object recognition by multisensor integration, and system organization for multisensor integration.

Course Prerequisites
Prereq: 662, 763, Math 530 or Stat 427 or equiv, and CS&E 660.

Quarters of Offering
Au Qtr.

General Info, Cross-listings, Exclusions, etc.
Cross-listed with:
General Info:
Exclusion:
Courses that require this as a direct prerequisite: none
Prereq by topic: Fundamental of probability and statistics, organization of computer systems, principle of computer operating systems, Fourier transform, ability to use a high-level language such as C.

Learning Outcomes (with ABET Criterion 3 Student Outcomes for Undergraduate Courses)
1. Students will learn principles of physical sensing devices and interface of multi-sensors with computer systems. (Criteria 3(a),(c))
2. Students will learn mechanisms for multi-sensor data fusion, wavelet transform for data fusion, and system organization for multi-sensor integration. (Criteria 3(a),(c))
3. Students practice oral communication skill. (Criterion 3(g))

Text(s) and Other Course Materials
Author(s) Publisher
No text

References (supplemental reading)
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Topics and (# of Lectures)
Introduction of physical sensing devices (1)
Sensor interface to computer systems (1)
Organization of multisensor integration (2)
Multisensor data fusion approaches (6)
Wavelet transform for image processing (5)
Performance evaluation of multi-sensor integrated system (1)
Student presentations on examples of multi-sensor integration (2)
Test (2)

Representative Lab Assignments

Grading Plan
Homework 20%
Design project 10%
Two mid-term exams 15% each
Oral presentation 10%
Final exam 30%

Relationship to ABET Criterion 3 Student Outcomes (a-k)

Relationship to Additional ABET Student Outcomes

Course Supervisor: Zheng
Date of Approval of Standard Syllabus by Area: February 2, 1999
Most Recent Course Evaluation: 12/02
Most Recent Area Review: 2/03