
CSE 4810 Capstone Software Design: 3D Cameras

Credits

5.0 (3 hrs lecture, 2 hrs+ meeting times)

Lead Instructor

Dieter Fox

Textbook

None

Course Description

Students work in teams to design and implement a software project involving multiple areas of the CSE curriculum. Emphasis is placed on the development process itself, rather than on the product.

Prerequisites

CSE 331 or CSE 341; CSE 326 or CSE 332; CSE 351 or CSE 378; substantial programming experience such as CSE 451 or CSE 457.

CE Major Status

Selected Elective

Course Objectives

- To gain appreciation for the challenges in developing complex sensor driven computing systems.
- To experience the development of a complete sensor-driven system from design to implementation.
- To present design goals and decisions as well as implementation results in both verbal presentation and written documentation.
- To have you work in a larger team than in the past to learn about coordinating such groups.

ABET Outcomes

- (a) an ability to apply knowledge of mathematics, science, and engineering
- (b) an ability to design and conduct experiments, as well as to analyze and interpret data
- (c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- (d) an ability to function on multi-disciplinary teams
- (e) an ability to identify, formulate, and solve engineering problems
- (f) an understanding of professional and ethical responsibility
- (g) an ability to communicate effectively
- (h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- (i) a recognition of the need for, and an ability to engage in life-long learning
- (j) knowledge of contemporary issues
- (k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

Course Topics

- Kinect style depth cameras: functionality and SDKs
- Object recognition
- Body pose tracking
- Human computer interaction
- World Wide Telescope