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College of Engineering & Computer Science

Fall 2012

CEG 7550-01: Computer Vision

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CEG-7550 Computer Vision

Fall 2012

CRN: 73111 **Lecture: 3:30-4:50 PM, T, R** **Location: 191 JC**
Instructor: A. Goshtasby **Office Location: 495 Joshi** **E-mail: agoshtas at wright dot edu**
Phone: 937-775-5170 **Office Hours: 1:00–2:00 PM, M,W and 2:00–3:00 PM, T,R.**

No. Units: 3

Textbook:

Computer Vision: Algorithms and Applications
Richard Szeliski
Springer 2010

Purpose of Course:

This course covers basic algorithms for low-level, mid-level, and high-level vision. The algorithms deal with edge detection and image segmentation, feature detection and matching, and object recognition. Specific topics covered in the course are:

Contents: The following topics will be covered.

1. Introduction
2. Image formation
3. Linear filtering
4. Feature detection and matching
5. Image segmentation
6. Feature-based alignment
7. Image stitching
8. Structure from Motion
9. Dense motion estimation
10. Stereo correspondence
11. 3-D reconstruction
12. Recognition

Learning Goals:

Students will learn algorithms that extract various types of information from images, analyze the information, and describe the contents of images. Some of the algorithms will be implemented as class projects.

Projects and Exams:

There will be five projects and five quizzes. Each project will implement an algorithm discussed in class. Programs will be accepted in C/C++ or MATLAB. All submitted programs should compile and run on college computers.

Grading Policy:

The projects will worth 50 points and the quizzes will worth 50 point. The following grades are guaranteed A: 90..100, B: 80..89, C:70..79, D: 60..69, E: 0..59.

Calendar:

Project 1	Assigned 9/11	Due: 9/25, 3:30 PM
Project 2	Assigned: 9/27	Due: 10/11, 3;30 PM
Project 3	Assigned: 10/16	Due: 10/30, 3:30 PM
Project 4	Assigned: 11/1	Due: 11/15, 3:30 PM
Project 5	Assigned: 11/20	Dues: 12/6, 3:30 PM

Quizzes will be on 9/13, 10/2, 10/18, 11/8, and 11/29.