Fall 2005

CEG 724: Computer Vision I

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CEG-724 Computer Vision I

Fall 2005

Call No.: 17357  Lecture: 6:05- 7:20. M, W, F  Location: 144 Ross
Instructor: A. Goshtasby  Office Location: 341 RC  Phone: 937-775-5179
E-mail: agoshtas@wright.edu  Office Hours: 1:00 - 3:00 PM, M, W, F, or by appointment.

No. Units: 4

Prerequisites: CS-600, MTH-230, MTH-253

Textbook:

Machine Vision: Theory Algorithms, Practicallities
Third Edition
by E. R. Davies
Morgan Kaufmann, 2005

Purpose of Course:
This course covers basic techniques for low-level and some mid-level vision processing. The techniques include: image filtering, intensity thresholding, edge detection, 2-D shape analysis, line and circle detection, corner detection, pattern matching.

Contents:
1. Introduction
2. Image Operations
3. Image Filtering
4. Image Segmentation by Intensity Thresholding
5. Image Segmentation by Boundary Detection
6. 2-D Shape Analysis
7. Line Detection
8. Circle Detection
9. Hough Transform
10. Corner Detection
11. Pattern Matching

Learning Goals:
In this course we will learn computer algorithms that derive information from images. Some of the techniques will be practiced through computer implementation.
Projects and Exams:

There will be three programming assignments, a midterm exam, and a final project. Programs should be submitted electronically or handed in on PC disks.

Grading Policy:

Programming assignments will be worth 40%, midterm will be worth 25%, and final project will be worth 30%, and class participation will be worth 5% of the overall grade. Grades will be assigned as follows:

A: [91-100], B: [81-90], C: [71-80], D: [61-70], F: [0-60].

Calendar:

<table>
<thead>
<tr>
<th>Assignment 1</th>
<th>Handed out: 9/19/05</th>
<th>Due: 9/28/05, 6:00 PM</th>
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<tbody>
<tr>
<td>Assignment 2</td>
<td>Handed out: 9/18/05</td>
<td>Due: 10/10/05, 6:00 PM</td>
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<td>Assignment 3</td>
<td>Handed out: 10/10/05</td>
<td>Due: 10/19/05, 6:00 PM</td>
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<tr>
<td>Midterm Exam</td>
<td>On 11/02/05, 6:05 - 7:20 PM</td>
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<tr>
<td>Final Project</td>
<td>Handed out: 10/24/05</td>
<td>Due: 11/10/05, 6:00 PM</td>
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