

ECG782: Multidimensional Digital Signal Processing

Lecture 00
Course Introduction

Outline

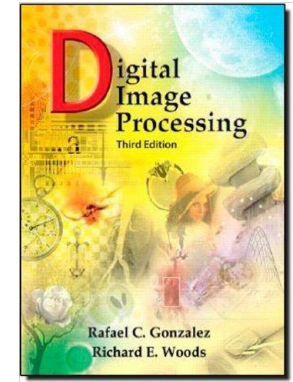
- Course Syllabus
- Grading Explanation
- Matlab Note

Course Information I

- Instructor
 - Professor Brendan Morris
 - Office: SEB 3216, Hours: M-Th 15:00-16:00
 - Email: brendan.morris@unlv.edu
- Website
 - <http://www.ee.unlv.edu/~b1morris/ecg782/>
 - Has schedule, lectures, homework, etc.
 - Bookmark it!

Course Information II

- Required Textbook
 - Digital Image Processing, 3rd Edition, Gonzalez and Woods, 2008
- Recommended References
 - Computer Vision: Algorithms and Applications, Szeliski [online]
 - <http://szeliski.org/Book/>
 - Image Processing, Analysis, and Machine Vision, 4th Edition, Sonka, Hlavac, and Boyle, 2008



Grading I

- Final 30%
- Project 30%
- Midterm 20%
- Homework 20%

- Final
 - Tuesday Dec. 8, 18:00-20:00
 - Put date in calendars now – no makeup exams will be given
 - Handwritten notes allowed

Grading II

- Project
 - Each student will do an individual computer vision project
 - Programming done using OpenCV or Matlab (or another language of choice)
 - Grading based on presentation and report
- Homework
 - Approximately 5 assignments + paper reading
 - Due in class and no late assignments accepted
 - Permitted to work with and help one another
 - All assignments must be completed and turned in individually
 - Copying is unacceptable

Topics

- Imaging properties and mathematics
- Spatial image filtering
- Frequency domain processing
- Morphology
- Feature Detection and Representation
- Segmentation
- Motion estimation
- Object detection
- Object recognition
- Tracking

Matlab

- You are expected to use Matlab
 - Available on campus computers [[link](#)]
 - Must have an ACE account
 - <http://oit.unlv.edu/accounts/computing-account>
 - Student copy is affordable (\$99) and very useful
 - http://www.mathworks.com/academia/student_version/
 - Includes Signal Processing and Image Processing Toolboxes among others
- Many tutorials are available online
 - http://www.mathworks.com/academia/student_center/tutorials/
 - You'll never go back to a calculator