ECG782: Multidimensional Digital Signal Processing

Lecture 00
Course Introduction

http://www.ee.unlv.edu/~b1morris/ecg782/
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

• Recommended References
  ▫ Computer Vision: Algorithms and Applications, Szeliski [online]
    ● http://szeliski.org/Book/
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