CS-6384 Computer Vision, Spring 2018
Friday, Saturday Friday 4:00-6:45 PM sec.1, Saturday 2:00-4:45 PM sec.2, Room ECSS 2.415

Instructor: Haim Schweitzer
Office: ECSS 3.602
Office Hours:
• Friday: 6:45-7:15PM
• Saturday: 4:45-5:30PM
Telephone: (972)883-2238 (for emergencies)
Email: HSchweitzer@utdallas.edu

Instructor: Haim Schweitzer
Office: ECSS 3.602
Office Hours:
• Friday: 6:45-7:15PM
• Saturday: 4:45-5:30PM
Telephone: (972)883-2238 (for emergencies)
Email: HSchweitzer@utdallas.edu

Course Description

Texts

Required Text

Most of the material will be covered from class-notes with selected parts taken from sources available on the web.
There is no required text.

Other material

• Learning OpenCV by Kaehler and Bradsky. Available as ”ebook” from UTD library.
• Computer Vision by Ballard and Brown. This book can be accessed online at: http://homepages.inf.ed.ac.uk/rbf/BOOKS/BANDB/bandb.htm
• Digital Picture Processing by Rosenfeld and Kak.
• Digital Image Processing by Gonzalez and Woods.
• Computer Vision by Shapiro and Stockman

It is not necessary to buy any of these books.

Important Dates

• Test 1: March 3, 2018. (Review March 2, 2018)
• Test 2: April 28 2018. (Review April 27, 2018)
• Course Grades Available : May 10, 2018.

Grading Policy

• Homework 5%. (Assignments will not be graded.)
• Quizzes 5%. (Best 1/3 from quizzes given in both sections will count.)
• Projects 20%. (2-4 projects.)
• Test 1 35%. (Open books.)
• Test 2 35%. (Open books.)

Topics

• Pixel Techniques: Quantization, Color, Segmentation, Rescaling, Geometric-transformations.
• Neighborhood Techniques: Cross-correlation, Convolution, Edge Detection, Smoothing, Image transforms.
• Object recognition: Template-matching, Normalized-correlations, Viola-Jones approach.
• Deep Learning, convolutional neural nets for object recognition.
• Perspective Geometry.
• If time permits: Video Related Topics. Motion, Optical Flow.
Pre-requisites

- Pre-requisite: CS-5343
- Projects and some homework assignments require programming. We will use the OpenCV and the TensorFlow software packages.

Attendance

1. Absence in three consecutive lectures will result in the course grade being lowered by one letter.
2. Absence in four consecutive lectures will automatically result in a failing grade (F) in the course.

Software

Additional Policies

- All exams are open books and notebooks.
- Computers are not allowed in exams, but pocket calculators may be needed.
- You must be present during the evaluation of your project.