922U3010 Digital Image Processing (03/07/2018)

Course Syllabus

Term: Spring 2018
Course Title: Introduction to Digital Image Processing

Instructor:

Dr. Ming-Sui (Amy) Lee
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National Taiwan University
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Lecture: Wednesday 2:20 p.m.~ 5:10 p.m. @ CSIE 101

Website: https://ceiba.ntu.edu.tw/1062DIP

Teaching Assistants:

郭柏辰
Office Hours: 14:00 ~ 16:00, Monday
黃聖凱
Office Hours: 16:00 ~ 18:00, Thursday
Office: CSIE Building, Room 532
E-mail: dip.mslee@gmail.com

Textbook:

William K. Pratt: Digital Image Processing, 3rd Edition, John Wiley & Sons Inc., 2001.

Reference Books:

1. D. E. Dudgeon and R. M. Mersereau: Multidimensional Digital Signal Processing, Prentice Hall, 1984.
2. Anil K. Jain: Fundamentals of Digital Image Processing, Prentice Hall, 1989.
3. J. S. Lim: Two-Dimensional Signal and Image Processing, Prentice Hall, 1990.
4. Rafael C. Gonzalez and Richard E. Woods: Digital Image Processing, Prentice Hall, 2010.
5. Ronald N. Bracewell: Two-Dimensional Imaging, Prentice Hall, 1995.
6. Kenneth R. Castleman: Digital Image Processing, Prentice Hall, 1996.

Homework:

There will be 5~6 assignments. All require computer programming. No late homework will be accepted. Plagiarism is strictly prohibited.

Grading Policy:

1. Homework: 40%
2. Midterm Exam: 30%
3. Term Project: 30%

Tentative Schedule:

I. Introduction and Digital Image Fundamentals
II. Image Enhancement in Spatial Domain
III. Edge Detection
IV Geometrical Modification
V Morphological Processing
VI Digital Halftoning and Inverse Halftoning
VII Texture Analysis
VIII Document Processing
IX Image Sampling and Transforms
X Image Enhancement in Frequency Domain
XI Color Image Processing
XII Image Compression