Digital Image Processing

Ming-Han Tsai

Spring 2021
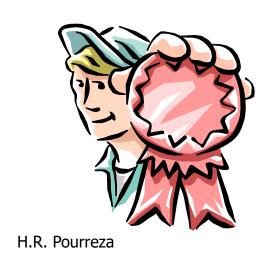
Basic information

- **Instructor**
  - 蔡明翰 Ming-Han Tsai
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  - IE229
  - #3737
  - Office Hour： 14:00~18:00 Wed.

- **TA**
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  - IE 243
  - #3722

One Picture is Worth More Than Ten Thousand Words

H.R. Pourreza

Course Outline

- What is DIP

- Origins of DIP

- Fields that use DIP

- Fundamental steps in DIP

- Components of an IP system

Reference Books

- Digital Image Processing   3/e
  - Rafael C. Gonzalez, and Richard E. Woods
  - Prentice Hall

- OpenCV Computer Vision Application Programming Cookbook
  - Robert Laganiere
  - Packt Publication Ltd.

- Learning OpenCV : computer vision with the OpenCV library
  - Adrian Kaehler & Gary Bradski
  - O'Reilly

Course Schedule

週次	單元名稱與內容
1	02/25 Syllabus / Introduction
2	03/04 Digital Image Fundamentals
3	03/11 OpenCV Course I + HW1 Announced
4	03/18 OpenCV Course II
5	03/25 HW2 Announced + Interpolation
6	04/01 Spatial Filtering
7	04/08 Morphological Image Processing
8	04/15 HW3 Announced + Edge Detection and Line Extraction
9	04/22 Moving Object Segmentation

週次	單元名稱與內容
10	04/29 Mid Exam
11	05/06 Project Announced + Motion and Tracking
12	05/13 Frequency Domain
13	05/20 Project Proposal
14	05/27 Introduction to Computer Vision
15	06/03 Final Exam
16	06/10 Final Presentation
17	06/17 Final Presentation
18	06/24 統籌會考/期末停課

Grading

- Homework: 30% (10%*3)

- Mid-term Exam: 15%

- Final Exam: 20%

- Final project: 30%

- Attendance 5%