

## COMP 5422 Multimedia Computing

Instructor: Dr. Lei Zhang

Office Hour: Mon 4:30-5:30 pm. (PQ 729)

E-mail: [cslzhang@comp.polyu.edu.hk](mailto:cslzhang@comp.polyu.edu.hk)

Course WebCT: <http://webct2.polyu.edu.hk/webct/public/home.pl>

TA: Mr. Kaihua Zhang, PQ719, [cskhzhang@comp.polyu.edu.hk](mailto:cskhzhang@comp.polyu.edu.hk)

### Reference books

- ◆ Z.-N. Li and M.S. Drew, *Fundamentals of Multimedia*, Prentice-Hall, 2004.
- ◆ R. C. Gonzalez and R. E. Woods, *Digital Image Processing*, Prentice Hall Inc., 2008.
- ◆ Y. Wang, J. Ostermann, Y.Q. Zhang, *Video Processing and Communication*, Prentice Hall Inc., 2002.

### Topics

- Programming Language Training: Matlab
- Basic Concepts of Color
  - A Case Study of Color Demosaicking of Digital Cameras
- Data Compression Techniques
  - Huffman Coding, Run-length Coding, Arithmetic Coding, Transform-based Coding, ...
- Audio
  - Audio Compression, Speech Signal Processing
- Image
  - Compression (e.g., JPEG, JPEG2000), Interpolation, Digital Inpainting, ...
- Video
  - Motion Estimation, Compression (e.g., MPEG2), Super-resolution, ...
- Object Tracking
- Image Quality Assessment

### Evaluation

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|------------------------------------|---|
| ■ (Lab) Assignment: $1 \times 8\%$ | ■ Midterm Test: $45\% \times 40\% = 18\%$ |
| ■ Quizzes: $2 \times 6\% = 12\%$   | ■ Final Exam: $45\% \times 60\% = 27\%$   |
| ■ Project: 35%                     |   |

### Important Dates

Quizzes:	Week 6 (Feb. 13), Week 12 (Mar. 26)
Midterm Test:	Week 9 (Mar. 5)
Submission of Project Report:	Week 14 (April 9)
Final Exam:	To be announced.

### Notes:

- ◆ All assignments, quizzes, projects and tests will be graded with the utmost care and fairness.
- ◆ All assignments and projects should be completed on the due dates. Without a valid reason for submitting them late, 5% of its total mark will be deducted per day, and no assignments and project reports accepted 7 days later. Cheating in quiz, exam or works with plagiarism will result in zero point.
- ◆ Feedback is particularly welcome. Please drop by during the instructor's office hour if you have any questions or comments, and e-mailing suggestions to the instructor is also a good way to keep the communication channel open. ☺