Multimedia Computing

COMP 4431

3 Credits

Prerequisite(s): COMP 2012 OR COMP 2012H; Exclusion(s): ELEC 3170

Name: Gibson LAM

Email: gibson@cse.ust.hk

Course Description

Color theory; digital audio, image and video fundamentals, representation, and processing; digital multimedia applications and programming.

List of Topics

- Multimedia Representation
- Audio Processing
  - MIDI
  - Digital Audio Concepts
  - Waveform Generation
  - Post-Processing Effects
  - Music Synthesis
- Image Processing
  - Image and Colour
  - Monadic Image Processing
  - Working with Histograms
  - Local Operations
- Video Processing
  - Basic Video Processing
  - Video Motion Tracking
  - Shaking Camera Removal
  - Chroma Key Effect
- Multimedia Compression
  - Audio Compression
  - Image Compression
  - Video Compression

Intended Learning Outcomes (ILOs)

On successful completion of this course, students are expected to be able to:

1. Identify and apply common digital audio representation concepts, tools and algorithms used to process digital audio
2. Identify and apply common digital image representation concepts, tools and algorithms used to process digital images
3. Identify and apply common digital video representation concepts, tools and algorithms used to process digital video

Assessments:

Assessment Task	Contribution to Overall Course Grade (%)
Labs	30%
Mini project	20%
Participation	10%
Final	40%

Required Texts and Materials

N/A

Additional Resources

N/A