Multimedia in Social Networks (MM)

Place: Room 107, New Building, IIS, AS / R601, Delta Building, NTHU

Time: Mon, 14:00-17:00

Chair: Dr. Wen-Huang Cheng  
Dr. Hwann-Tzong Chen  
Dr. Wen-Hung Liao  
Dr. Chia-Wen Lin  
Dr. Yi-Hsuan Yang

Outline:
1. Introduction to Multimedia
   1.1. What is Multimedia?  
   1.2. Overview of Multimedia Applications  
   1.3. Multimedia Research Resources
2. Multimedia Basics
   2.1. Graphics and Image Data Representations  
   2.2. Color in Image and Video  
   2.3. Fundamental Concepts in Video  
   2.4. Basics of Digital Audio
3. Multimedia Processing & Coding
   3.1. Video coding fundamentals  
   3.2. Lossless Compression & Lossy Compression  
   3.3. Transform Coding  
   3.4. Motion Compensated Predictive Coding
4. Multimedia Coding Standards
   4.1. JPEG, JPEG-2000  
   4.2. H.261, H.263, MPEG-1, MPEG-2, MPEG-4, and H.264
5. Social Network Basics
   5.1. An Introduction to Social Networks  
   5.2. Properties and Models of Social Networks  
   5.3. Centrality Analysis and Community Detection  
   5.4. Information Diffusion in Social Networks
6. Social Multimedia Analytics
   6.1. Sentiment, Opinion, Locations, and Multimedia  
   6.2. Search and Recommendation in Social Media
7. Machine Learning in Social Multimedia Analytics
   7.1. Unsupervised Learning  
   7.2. Discriminative Models  
   7.3. Generative Graphical Models
8. Advanced Multimedia Processing
   8.1. Image Manipulation Techniques  
   8.2. Interactive Multimedia Editing

Textbook/Reference:
11. Selected research papers.

Office hours: by appointment  
TA: Mrinal Baowaly, baowaly@gmail.com
Grades:
- **Homework Assignments**: (30%)
- **Midterm Exam**: (30%)
- **Final Project**: (40%)

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<td>Introduction to Multimedia</td>
<td>Wen-Huang Cheng</td>
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<td>Wen-Hung Liao</td>
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<td>Yi-Hsuan Yang</td>
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<td>Machine Learning in Social Multimedia Analytics</td>
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<td>Multimedia Recommendation</td>
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