Multimedia in Social Networks (MM)

Place: Room 108, Old Building, IIS, AS

Time: 09:00-12:00 Tue

Chair: Dr. Wen-Huang Cheng
Dr. Hwann-Tzong Chen
Dr. Cheng-Te Li
Dr. Wen-Hung Liao
Dr. Chia-Wen Lin

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
   6.3. User Understanding
   6.4 Using Social Multimedia for Prediction and Forecast
7. Advanced Multimedia Processing
   7.1. Image Manipulation Techniques
   7.2. Interactive Multimedia Editing

Textbook/Reference:
11. Selected research papers.
Office hours: by appointment

TA: Fredrick Mzee Awuor

Grades:
- Class Participation (10%)
- Homework Assignments: (20%)
- Midterm Exam (30%)
- Final Project (40%)
  - Proposal: 10%
  - Demo: 20%
  - Report: 10%
  - Bonus: 3 points (for the best three demos)

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<th>Week</th>
<th>Date</th>
<th>Topics/Brief Description</th>
<th>Lecturers</th>
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<td>2016/02/16</td>
<td>Introduction to Multimedia</td>
<td>Cheng-Te Li</td>
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<td>2016/02/23</td>
<td>Multimedia Basics (I)</td>
<td>Wen-Hung Liao</td>
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<td>2016/03/01</td>
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<td>2016/03/08</td>
<td>Multimedia Processing &amp; Coding (I)</td>
<td>Chia-Wen Lin</td>
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<td>5</td>
<td>2016/03/15</td>
<td>Multimedia Processing &amp; Coding (II)</td>
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<td>2016/03/22</td>
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<td>8</td>
<td>2016/04/06 1400-1700</td>
<td>Social Network Basics (II)</td>
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<td>2016/04/12</td>
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<td>2016/04/19</td>
<td>Machine Learning in Social Multimedia Analytics</td>
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<td>11</td>
<td>2016/04/26</td>
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<td>2016/05/03</td>
<td>Final-Project Proposal Presentation Social Multimedia Analytics (II)</td>
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<td>17</td>
<td>2016/06/07</td>
<td>Special Topics</td>
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<td>2016/06/14</td>
<td>Review Week (No class)</td>
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<td>2016/06/22 (Wed)</td>
<td>Final Project Demo and Presentation @ TUNA</td>
<td>MM Faculty</td>
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