

Ching-Yung Lin

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Education

Ph.D.	Electrical Engineering	Columbia University, New York, NY	2000
	Specialization: Multimedia Analysis and Security (GPA:4.0/4.0)		
M.S.	Electrical Engineering	National Taiwan University, Taipei, Taiwan	1993
	Specialization: Image and Video Processing (Highest GPA in the division of Communications and Signal Processing)		
B.S.	Electrical Engineering	National Taiwan University, Taipei, Taiwan	1991
	Specialization: Communications and Signal Processing		

Work Experience

Research Staff Member IBM T. J. Watson Research Center, Hawthorne, NY 10/2000 to present

- Lead projects on large-scale real-time video and multimodality semantic understanding, filtering and sensor networks.
- Research on distributed signal processing, machine learning based on noisy data, and human behavior and social network modeling.
- Research on video semantic indexing, video semantic concept detection, multimodality understanding and intelligence analysis. Participate NIST TREC video retrieval benchmarking activities.
- Developed surveillance system based on images, videos or environmental information.
- Established standard-compliant multimedia personalization, summarization, editing and transcoding systems.
- Participated in the developing processes of MPEG-7 and MPEG-21 standards.

Affiliate Associate Professor Department of Electrical Engineering, University of Washington, Seattle, WA 11/2005 to present

Affiliate Assistant Professor Department of Electrical Engineering, University of Washington, Seattle, WA 10/2003 to 10/2005

- Co-advise Ph.D. students on social computing, machine learning, data mining, multimodality semantic analysis, understanding, and distributed processing in the Information Processing Lab.

Adjunct Associate Professor Department of Electrical Engineering, Columbia University, New York, NY 1/2005 to present

- Teach course at spring/summer semesters: *Multimedia Security Systems*.
- Advise students on smart video semantic sensor projects.

Research Assistant Columbia University, New York, NY 1/1997 - 9/2000

- Designed and implemented the first successful semi-fragile content authentication system, which distinguishes standard-compliant compressions from malicious manipulation.
- Modeled signal variation and pioneered a public watermarking technique for digital image print-and-scan process.
- Established theorems of the theoretical information-hiding capacity of media data.

Teaching Assistant	Columbia University, New York, NY	9/1996 – 12/1999
<ul style="list-style-type: none"> • TA for the Advanced Signal Processing course. • Developed an interactive multimedia system for Columbia Video Network, used in the Image/Video Processing course. 		
Summer Intern	NEC Research Institute, Princeton, NJ	5/1999 - 8/1999
<ul style="list-style-type: none"> • Designed and implemented public watermarking methods to survive geometric distortion. • Modeled signal variation in DVD/VHS video transcoding process. 		
Instructor	National Taiwan University, Taipei, Taiwan	8/1995 - 7/1996
<ul style="list-style-type: none"> • Instructed graduate students on the computer network programming and analysis lab course. • Assisted to establish the computer network lab in National Taiwan University. • Assisted to the management issues of the Telecommunication Center in National Taiwan University. 		
R & D Engineer	EeRise Co., Taipei, Taiwan	12/1995 - 7/1996
<ul style="list-style-type: none"> • Designed a computer vision system for detecting sub-pixel object positions to correct monitor misconvergence. 		
Air Force 2nd Lieutenant	Air Force, Chiayi Airport, Taiwan	7/1993 - 5/1995
<ul style="list-style-type: none"> • Maintained military ground-to-ground and ground-to-air communication systems including wireless base stations, handsets, control tower and radar station. 		
Research Assistant	National Taiwan University, Taipei, Taiwan	8/1991-6/1993
<ul style="list-style-type: none"> • Developed algorithms for image/video coding, shape recognition, 2D filter design, and wavelet analysis. • Designed systems for detection and segmentation of infrared targets; Benchmarking of phase array radar detectors. 		

Selected Awards and Patents

- IEEE Circuits and Systems Society Outstanding Young Author Award, 2003.
-- To honor an especially meritorious paper published in any one of the IEEE CAS Society's eight Transactions during the calendar years of 2001 and 2002 whose author at the date of submission is less than 30 years of age. The award is based on general quality, originality, contributions, subject matter and timeliness.
- Best Performance in NIST TREC Video Semantic Concept Detection Benchmarking, 2002, 2003 & 2004.
- IBM Research Division Award, March 2005.
- IBM Invention Achievement Awards, 2001 & 2003.
- Acer Best EECS Master Thesis Award in Taiwan (Lung-Terng Gold Award), 1993.
- Outstanding Paper Award, Conf. on Computer Vision, Graphics and Image Processing, 1993.
- Four patents awarded and thirteen pending in the field of multimedia security and multimedia understanding.

Selected Recent Professional Activities

- **Editorships:**

- ***The Editor of Interactive Magazines (EIM): Communications Magazine, Network Magazine, and Wireless Magazine***, IEEE Communications Society (ComSoc), 2004-2006.

-- The Interactive Magazines Editorial Board is responsible for the multimedia enhancements, as well as the On-line interactive magazines only articles. Members of the Interactive Magazines Editorial Board are appointed by the Editor of the Interactive Magazines (EIM). The EIM is a one of the eleven members at the ComSoc Magazines Board, with other ten Editor-in-Chiefs or Editors of ComSoc Magazines.

- ***Associate Editor***, IEEE Trans. on Multimedia, 2004 – 2006.
- ***Member of Editorial Board***, Journal of Visual Communication and Image Representation, 2005 – 2008.
- ***Guest Editor***, Proceedings of the IEEE, *Special Issue on Enabling Security Technologies for Digital Rights Management*, June 2004.
- ***Guest Editor***, EURASIP Journal on Applied Signal Processing, *Special Issue on Visual Sensor Network*, Sept. 2006.

- **International Project Organization:**

- ***Chair - Video Collaborative Annotation Forum***, supported by NIST, Library of Congress, and 23 other worldwide institutes, Feb 2003 – Nov 2003.

-- I initiated and led this first large-scale video annotation project. I also developed the first distributed collaborative video annotation system being used in this project. One hundred and eleven researchers participated. The goal was to establish semantic ontology and associate semantic ground-truth labels to a large video dataset of 63 GB. The objective was to establish a common large-scale database to foster the research of video understanding and semantic retrieval.

- **International Conference Organization:**

- ***Technical Program Chair***, *IEEE Intl. Conf. on Information Technology: Research and Education (ITRE)*, Newark, August 2003.
- ***Program Chair***, *Wireless and Optical Communications Conference*, Shanghai, October 2006.
- ***Steering Committee (Circuit and System Society Appointed Representative)***, *IEEE Intl. Conf. on Multimedia & Expo (ICME) (sponsored by Circuits and Systems Society, Communications Society, Signal and Processing Society and Computer Society)*, 2005 – 2006.
- ***Chair***, Watson International Workshop on Multimedia, Yorktown Heights, June 2003.
- ***Area Chair***, Multimedia Content Analysis, *IEEE Intl. Conf. on Multimedia & Expo (ICME)*, Toronto, July 2006.
- ***Area Chair***, Multimedia Understanding and Recognition, *IEEE Intl. Symposium on Circuits and Systems (ISCAS)*, Kos, Greece, May 2006.
- ***Area Chair***, Multimedia Understanding and Recognition, *IEEE Intl. Symposium on Circuits and Systems (ISCAS)*, Vancouver, May 2004.
- ***Registration Chair*** – *IEEE Intl. Workshop on Multimedia Signal Processing (MMSP)*, Shanghai, Oct 2005.
- ***Best Open-Source Software Chair*** – *ACM Multimedia (ACMMM)*, Singapore, Nov 2005.
- ***Student Paper Award Chair*** – *IEEE Intl. Conf. on Image Processing (ICIP)*, Singapore, Oct 2004.
- ***Student Paper Award Advisory Board*** – *IEEE Intl. Conf. on Image Processing (ICIP)*, Genova, Sep 2005.
- ***Publicity Chair*** – *IEEE Intl. Conf. on Multimedia & Expo (ICME)*, Taipei, July 2004.
- ***Publicity Chair*** – *IEEE Pacific-Rim Conference on Multimedia (PCM)*, Beijing, Dec 2001.

- **Conference Tutorial Lecturer:**

- **“Emerging Multimedia Understanding Technologies,”** IEEE Intl. Workshop on Multimedia Signal Processing, Shanghai, China, Oct 2005.
- **“Emerging Video Understanding Technologies and Applications,”** IEEE Intl. Symposium on Circuits & Systems (ISCAS), Kobe, Japan, May 2005.
- **“Emerging Multimedia Security Technologies for Digital Rights Management,”** IEEE Intl. Conf. on Consumer Electronics (ICCE), Las Vegas, Jan. 2005.
- **“Multimedia Security Technologies for Digital Rights Management,”** IEEE Global Communication Conference (Globecom), San Francisco, Dec 2003.
- **“Multimedia Security Technologies for Digital Rights Management,”** IEEE Intl. Conf. on Multimedia & Expo (ICME), Baltimore, July 2003,
- **“Lossless Data Hiding,”** IEEE Intl. Symposium on Circuits & Systems (ISCAS), Bangkok, May 2003,

- **Conference Special Session Organizer:**

- **“Content Understanding and Transcoding Techniques for Media Adaptation,”** IEEE Intl. Conf. on Multimedia & Expo (ICME), Taipei, June 2004;
- **“The Role of Machine Learning in Extracting Semantics from Multimedia Content,”** IEEE Intl. Conf. on Image Processing (ICIP), Barcelona, September 2003;
- **“Emerging Multimedia Security Technologies for Digital Rights Management,”** IEEE Intl. Conf. on Multimedia & Expo (ICME), Taipei, June 2004;
- **“Media Security Issues in Streaming and Mobile Applications,”** IEEE Intl. Conf. on Image Processing (ICIP), Singapore, October 2004;
- **“Multimedia Security and Watermarking Applications,”** IEEE Intl. Conf. on Information Technology: Coding and Computing (ITCC), Las Vegas, April 2001.

- **Academic Interactions:**

- **Visiting Associate Professor** – Dept. of Computer Science, National Taiwan University, December 2005.
- **International Advisory Board** – Dept. of Electrical Engineering, National Cheng-Kung University, Tainan, Taiwan, 2004 –2006.
- **Course/ Short Lecture,**
 - (Course 3pt) **“Topics in Signal Processing: Multimedia Security Systems,”** Dept. of Electrical Engineering, Columbia University, Spring 2005, Summer 2005, Spring 2006.
 - (Lecture 12 hrs) **“Multimodality Signal Understanding and Social Computing,”** Dept. of Computer Science, National Taiwan University, December 2005.
 - (Lecture 8 hrs) **“Multimedia Understanding and Multimedia Security,”** Dept. of Computer Science, National Tsinghua University, Nov. 2003.
 - (Lecture 3 hrs) **“Statistical Methods for Video Indexing and Analysis,”** Dept. of Electrical Engineering, Columbia University, Oct. 2003.
 - (Lecture 6 hrs) **“Multimedia Security in Visual Information Systems,”** Dept. of Electrical Engineering, Columbia University, Nov. 2001 & Nov. 2002.
- **IBM Research Student Fellowship Committee** – IBM Research, 2004.
- **IBM Research External Multimedia Seminar Co-Organizer** – IBM Research, 2004 - 2005.

- **Memberships, Technical Committee Memberships, and Reviewers:**

- *IEEE Senior Member ('04 - , Member '96-'97, '01-'03, Student Member '98-'00)*
- *ACM Member ('01 - , Student Member '98 - '00)*
- *IEEE Communication Society Multimedia Technical Committee ('02-),*
- *IEEE Circuits and Systems Society Visual Signal Processing Technical Committee ('03-),*
- *IEEE Circuits and Systems Society Multimedia System and Application Technical Committee ('03-),*
- *IEEE Signal Processing Society Multimedia Signal Processing Technical Committee ('06-'09),*
- *IEEE Computer Society Technical Committee on Data Engineering ('04-),*
- *IEEE Computer Society Technical Committee on Pattern Recognition and Machine Intelligence ('04-),*
- *ACM SIG Multimedia ('01-),*
- *ACM SIG Knowledge Discovery and Data mining ('05-),*
- *Member of American Association for the Advancement of Science (AAAS) ('05 -)*
- *Member of International Network for Social Network Analysis (INSNA) ('05 -)*
- **Technical Program Committee Member:** *More than 20 international conferences, including ACM Multimedia Conference, SPIE VCIP, IEEE ISCAS, IEEE Globecomm, IEEE ICC, IEEE ICME, IEEE ICIP, IEEE ITCC, IEEE ITRE, IEEE PCM, IEEE NIME, IEEE FPIV, IEEE ISM.... (not a complete list)*
- **Journal/Magazine/Book Reviewer:** *More than 20 international journals, magazines, and books, including IEEE Trans. on Multimedia, IEEE Trans. on Image Processing, IEEE Trans. on Circuits and Systems for Video Technology, IEEE Trans. on Signal Processing, IEEE Trans. on Signal Processing Letters, IEEE Multimedia Magazine, IEEE Signal Processing Magazine, IEEE Communications Magazine, ACM Multimedia System Journal, SPIE Journal of Visual Communication and Image Representation.... (not a complete list)*
- **Invited Talks:** *More than 20 invited seminar talks, including Columbia University, Univ. of Washington, Univ. of Michigan, New Jersey Institute of Technology, Stevens Institute of Technology, NEC Research, Panasonic Research, Sony Research, Microsoft Research, National University of Singapore, Institute of Information Research, Sinica Academics, Taiwan University, Tsinghua University, Taiwan Normal University, Chiao-Tung University, Cheng-Kung University.... (not a complete list)*

Student Advisees

- **Ph.D. Thesis Co-Advisor:**

- **Xiaodan Song**, *Dept. of Electrical Engineering, Univ. of Washington*. Thesis Title: Exploring Multimodality Relationships with Autonomous Learning and Community Mining. [expected Sept 2006]
- **Ya-Ti Peng**, *Dept. of Electrical Engineering, Univ. of Washington*. Thesis Title (temporary): Multimodality Sensor Information Inferencing for Life Science Applications. [expected 2008]
- **Jyh-Ren Shieh**, *Dept. of Computer Science, National Taiwan Univ.* Thesis Title (temporary): Information Assurance in Wireless Sensor Networks and Multimedia Communications. [expected 2008]

- **Master Student Research Projects:**

- **Victor Sutan**, *Dept. of Electrical Engineering, Columbia University, May ~ Dec 2005*. Project Title: Developing Smart Semantic Video Camera for Contextual Environmental Cognition – Signal Acquisition.

- **Jason Cardillo**, *Dept. of Electrical Engineering, Columbia University, May ~ Dec 2005*. Project Title: Developing Smart Semantic Video Camera for Contextual Environmental Cognition – Compressed Video Stream Processing.
- **Summer Interns at IBM Watson Research Center:**
 - **Navneet Panda**, *Dept. of Electrical and Computer Engineering, Univ. of California, Santa Barbara, June ~ Sept 2005*. Project Title: Speeding Up Support Vector Machine Classification.
 - **Gang Wu**, *Dept. of Electrical and Computer Engineering, Univ. of California, Santa Barbara, June ~ Sept. 2004*. Project Title: Machine Learning from Imperfect Labeling.
 - **Dongqing Zhang**, *Dept. of Electrical Engineering, Columbia University, May ~ Aug 2003*. Project Title: Multi-channel Multimedia Semantic Correlation in the Concept Space.
 - **Vida Ha**, *Dept. of Electrical Engineering and Computer Science, MIT, May ~ Aug 2001*. Project Title: Pervasive Video Streaming Clients on Palm PDA Devices.

Granted Recent Research Project Proposals

- **Large-Scale Video Semantic Information Filtering and Mining (PI)**, DoD, May 2004 – Dec. 2007.
- **Multimodality Sensor Signal Understanding on Human Activities (Co-PI)**, Institute of Information Industry (granted to the Univ. of Washington), Jan. 2006 – Dec. 2008.
- **Multimodality Sensor Fusion for Health Care Applications (Co-PI)**, Institute of Information Industry (granted to the Univ. of Washington), June 2005 – Dec. 2005.
- **Building Evolutionary Graphical Models for Expertise and Community Mining (PI)**, NEC Labs America (granted to the Univ. of Washington), Sept. 2004 – May 2006.
- **Reconstructing and Mining Semantic Threads across Multiple Video News Sources over Space and Time (Co-PI)**, Intelligence Community -- Advanced Research and Development Activity (ARDA), June. 2004 – June. 2006.
- **Pervasive Transcoding Middleware for Geospatial Intelligence Access**, Defense Information System Agency (DISA), Jan. 2003 – Feb. 2004.
- **Multimedia Semantic Mining**, IBM Adventure Research Fund, Aug. 2001 – Oct. 2004.

Selected Publications

[2006]:

Book

1. Wenjun Zheng, Heather Yu and Ching-Yung Lin, "**Multimedia Security Technologies for Digital Rights Management**," *Elsevier*, June 2006.

Conference Papers

2. Victor Sutan, Jason Cardillo and Ching-Yung Lin, “**Developing Smart Video Semantic Sensors**,” *IEEE Intl. Symposium on Circuits and Systems*, Kos Island, Greece, May 2006.
3. Ya-Ti Peng, Ching-Yung Lin, Ming-Ting Sun and Ming-Wei Feng, “**Sleep Condition Inferring Using Simple Multimodality Sensors**,” *IEEE Intl. Symposium on Circuits and Systems*, Kos Island, Greece, May 2006.
4. Xiaodan Song, Ching-Yung Lin, Belle L. Tseng and Ming-Ting Sun, “**Modeling Evolutionary and Relational Behaviors for Community-based Dynamic Recommendation**,” *SIAM Data Mining Conference*, Bethesda, MD, April 2006.
5. Ching-Yung Lin, Xiaodan Song, Ming-Ting Sun and Belle L. Tseng, “**Automatic Modeling of Social Networks through Content Analysis of Communications**,” *Sunbelt 26th Intl. Social Network Conf.*, Vancouver, Canada, April 2006.
6. Ya-Ti Peng, Ching-Yung Lin and Ming-Ting Sun, “**Multimodality Sensors for Sleep Quality Monitoring and Logging**,” *1st IEEE Workshop on Electronic Chronicles*, Atlanta, GA, April 2006.
7. Ya-Ti Peng, Ching-Yung Lin and Ming-Ting Sun, “**A Distributed Multimodality Sensor System for Home-Used Sleep Condition Inference and Monitoring**,” *IEEE/AMA/BMES Transdisciplinary Conference on Distributed Diagnose and Home Healthcare*, Arlington, VA, April 2006.

Book Chapters

8. Tian-Tsong Ng, Shih-Fu Chang, Ching-Yung Lin and Qibin Sun, “**Passive-Blind Multimedia Information Forensics**” in *Multimedia Security Technologies for Digital Rights Management*, Elsevier, April 2006.

[2005]:

Conference Papers

1. Xiaodan Song, Ching-Yung Lin and Ming-Ting Sun, “**Multimodality Concept Detectors on News Video**,” *Proc. of NIST Workshop on Text Retrieval Conf. (TRECVID)*, Gaithersburg, MD, November 2005.
2. Xiaodan Song, Ching-Yung Lin, Belle L. Tseng and Ming-Ting Sun, “**Modeling and Predicting Personal Information Dissemination Behavior**,” *ACM SIGKDD Intl. Conf. on Knowledge Discovery and Data Mining*, Chicago, August 2005. (**KDD 2005 Student Travel Award**)
3. Ching-Yung Lin, Olivier Verscheure and Lisa Amini, “**Semantic Routing and Filtering for Large-Scale Video Streams Monitoring**,” *IEEE Intl. Conf. on Multimedia & Expo*, Amsterdam, Netherlands, July 2005.
4. Xiaodan Song, Ching-Yung Lin and Ming-Ting Sun, “**Speech-based Video Retrieval Using WordNet**,” *IEEE Intl. Conf. on Multimedia & Expo*, Amsterdam, Netherlands, July 2005.
5. Xiaodan Song, Belle L. Tseng, Ching-Yung Lin and Ming-Ting Sun, “**ExpertiseNet: Relational and Evolutionary Expert Modeling**,” *Intl. Conf. on User Modeling*, Edinburgh, UK, July 2005. (**US National Science Foundation UM05 Student Travel Award**)
6. Ching-Yung Lin and Belle L. Tseng, “**Optimizing User Expectations for Video Semantic Filtering and Abstraction**,” *IEEE Intl. Symposium on Circuits and Systems*, Kobe, Japan, May 2005.
7. Xiaodan Song, Ching-Yung Lin and Ming-Ting Sun, “**Autonomous Learning of Visual Concept Models**,” *IEEE Intl. Symposium on Circuits and Systems*, Kobe, Japan, May 2005.

8. Lexing Xie, L. Kennedy, Shih-Fu Chang, Ajay Divakaran, Huifan Sun and Ching-Yung Lin, “**Layered Dynamic Mixture Model for Pattern Discovery in Asynchronous Multi-Modal Streams**,” *IEEE Intl. Conf. on Acoustics, Speech, and Signal Processing*, Philadelphia, PA, March 2005. (*Special Outstanding Paper Recommendation*)
9. Ching-Yung Lin, Xiaodan Song and Gang Wu, “**Imperfect Learning for Autonomous Concept Modeling**,” *SPIE EI 2005 – Storage and Retrieval for Media Databases*, San Jose, January 2005.

Journal/Magazine Papers

10. Qibin Sun, Shuiming Ye, Ching-Yung Lin and Shih-Fu Chang, “**A Crypto Signature Scheme for Image Authentication over Wireless Channel**,” *Intl. Journal of Image and Graphics*, January 2005.

[2004]:

Conference Papers

1. A. Amir, J. Argillander, M. Berg, S.-F. Chang, W. Hsu, G. Iyengar, J. Kender, Ching-Yung Lin, M. Naphade, A. Natsev, J. R. Smith, J. Tesic, G. Wu, R. Yan and D. Zhang, “**IBM Research TRECVID-2004 Video Retrieval System**,” *Proc. NIST Text Retrieval Conf. Video (TRECVID)*, Gaithersburg, MD, November, 2004.
2. Yi Wu, Ching-Yung Lin, Edward Chang, and John R. Smith, “**Multimodal Kernel Fusion for News Video Concept Detection**,” *IEEE Intl. Conf. on Image Processing*, Singapore, October 2004.
3. Lexing Xie, L. Kennedy, Shih-Fu Chang, Ajay Divakaran, Huifan Sun and Ching-Yung Lin, “**Discovering Meaningful Multimedia Patterns with Audio-Visual Concepts and Associated Text**,” *IEEE Intl. Conf. on Image Processing*, Singapore, October 2004. (*Student Paper Award*)
4. Xiaodan Song, Ching-Yung Lin and Ming-Ting Sun, “**Autonomous Visual Model Building Based on Image Crawling through Internet Search Engines**,” *The ACM Workshop on Multimedia Information Retrieval*, New York, October 2004. (*Student Travel Award, University of Washington, School of Engineering*)
5. Xiaodan Song, Ching-Yung Lin and Ming-Ting Sun, “**Cross-Modality Automatic Face Model Training from Large Video Databases**,” *The 1st IEEE Workshop on Face Processing in Video*, D.C., June 2004.
6. Ching-Yung Lin and Belle L. Tseng, “**Semantic Multimedia Authentication with Model Vector Signature**,” *IEEE Intl. Conf. on Multimedia & Expo*, Taipei, June 2004.
7. Ching-Yung Lin, Apostol Natsev, Belle L. Tseng, Matthew Hill and John R. Smith, “**Pervasive Transcoding Middleware for Geospatial Intelligence Access**,” *IEEE Intl. Conf. on Multimedia & Expo*, Taipei, June 2004.
8. Dongqing Zhang, Ching-Yung Lin and John R. Smith, “**Semantic Video Clustering across Sources using Bipartite Spectral Clustering**,” *IEEE Intl. Conf. on Multimedia & Expo*, Taipei, June 2004.
9. Milind Naphade, Apostol Natsev, Ching-Yung Lin and John R. Smith, “**Multi-Granular Detection of Regional Semantic Concepts**,” *IEEE Intl. Conf. on Multimedia & Expo*, Taipei, June 2004.
10. Qibin Sun, Shuiming Ye, Ching-Yung Lin and Shih-Fu Chang, “**A Crypto Signature Scheme for Image Authentication over Wireless Channel**,” *IEEE Intl. Conf. on Multimedia & Expo*, Taipei, June 2004.
11. Winston Hsu, L. Kennedy, C.-W. Huang, S.-F. Chang, Ching-Yung Lin and G. Iyengar, “**News Video Story Segmentation using Fusion of Multi-Level Multi-Modal Features in TRECVID**,” *IEEE Intl. Conf. on Acoustics, Speech, and Signal Processing*, Montreal, May 2004.

12. A. Amir, G. Iyengar, Ching-Yung Lin, M. Naphade, A. Natsev, C. Neti, H. J. Jock, J. R. Smith, B. L. Tseng, "**Multimodal Video Search Techniques: Late Fusion of Speech-based Retrieval and Visual Content-based Retrieval**," *IEEE Intl. Conf. on Acoustics, Speech, and Signal Processing*, Montreal, May 2004.
13. John R. Smith, Ching-Yung Lin, Milind Naphade, Apostol Natsev and Belle L. Tseng, "**Validity Weighted Model Vector-based Retrieval of Video**," *SPIE EI 2004 – Storage and Retrieval for Media Databases*, San Jose, January 2004.
14. Winston Hsu, Shih-Fu Chang, Chih-Wei Huang, Lyndon Kennedy, Ching-Yung Lin and Giri Iyengar, "**Discovery and Fusion of Salient Multi-modal Features towards news Story Segmentation**," *SPIE EI 2004 – Storage and Retrieval for Media Databases*, San Jose, January 2004.

Journal/Magazine Papers

15. Arnon Amir, Sankar Basu, Giri Iyengar, Ching-Yung Lin, Milind Naphade, John R. Smith, Savitha Srinivasan and Belle L. Tseng, "**A Multi-modal System for the Retrieval of Semantic Video Events**," *Journal of Computer Vision and Image Understanding*, July 2004.
16. Deepa Kundur, Ching-Yung Lin, Benoit Macq and Heather Yu, "**Scanning the Special Issue on Enabling Security Technologies for Digital Rights Management**," *Proceedings of the IEEE*, June 2004.
17. Belle L. Tseng, Ching-Yung Lin and John R. Smith, "**Video Personalization and Summarization System for Usage Environment**," *Journal of Visual Communications and Image Representation*, May 2004.
18. Belle L. Tseng, Ching-Yung Lin and John R. Smith, "**Video Personalization and Summarization System based on MPEG-7 and MPEG-21**," *IEEE Multimedia Magazine*, Jan.-Mar., 2004.

Book Chapters

19. Xiaodan Song, Ching-Yung Lin, and Ming-Ting Sun, "**Cross-Modality Autonomous Concept Learning**" in *Multimedia Neural Network*, Springal, Sept. 2004.
20. John. R. Smith, Ching-Yung Lin, Milind Naphade and Apostol Natsev, "**Multisource Video Clustering Using Semantic Model Vectors**" in *Multimedia Information Retrieval*, AIDA informazioni, March 2004.
21. Ching-Yung Lin, "**Issues on Multimedia Authentication**," in *Multimedia Security: steganography and digital watermarking techniques for protection of intellectual property*, IGP, March 2004.
22. Deepa Kundur, Heather Yu, and Ching-Yung Lin, "**Security and Digital Rights Management for Mobile Content**," in *Content Delivery in Mobile/ Wireless Internet*, Chapter 13, John Wiley & Sons, 2004.

[2003]:

Conference Papers

1. Ching-Yung Lin, Belle L. Tseng and John R. Smith, "**Video Collaborative Annotation Forum: Establishing Ground-Truth Labels on Large Multimedia Datasets**," *Proc. of NIST Text Retrieval Conf. (TREC)*, Gaithersburg, MD, November 2003.
2. A. Amir, W. Hsu, G. Iyengar, Ching-Yung Lin, M. Naphade, A. Natsev, C. Neti, H. J. Nock, J. R. Smith, B. L. Tseng, Y. Wu, D. Zhang, "**IBM Research TRECVID-2003 System**," *Proc. NIST Text Retrieval Conf. (TREC)*, Gaithersburg, MD, November, 2003.
3. Ching-Yung Lin, Belle L. Tseng, Milind Naphade, Apostol Natsev and John R. Smith, "**End-to-End Video Automatic Labeling System**," *ACM Multimedia*, November 2003.

4. C.-S. Li, C. Aggrarwal, M. Campbell, Y.-C. Chang and G. Glass, V. Iyengar, M. Joshi, Ching-Yung Lin, M. Naphade, J. R. Smith, B. Tseng, M. Wang, K.-L. Wu, P. S. Yu, "**EpiSPIRE: A system for environmental and public health monitoring**," *Dept. of Homeland Security Advanced Scientific Computing (ASC) Requirements Workshop*, Crystal City, VA, October, 2003.
5. John R. Smith, Ching-Yung Lin and Belle L. Tseng, "**Multimedia resource transcoding for MPEG-21 digital item adaptation**," *Proc. SPIE ITCOM: Internet Multimedia Management Systems IV*, Orlando, FL, September 2003.
6. Ching-Yung Lin, Belle L. Tseng, Milind Naphade, Apostol Natsev and John R. Smith, "**VideoAL: A Novel End-to-End MPEG-7 Automatic Labeling System**," *IEEE Intl. Conf. on Image Processing*, Barcelona, September 2003.
7. Belle L. Tseng, Ching-Yung Lin, Milind Naphade, Apostol Natsev and John R. Smith, "**Normalized Classifier Fusion for Semantic Visual Concept Detection**," *IEEE Intl. Conf. on Image Processing*, Barcelona, September 2003.
8. John R. Smith, Alejandro Jaimes, Ching-Yung Lin, Milind Naphade, Apostol Natsev and Belle L. Tseng, "**Interactive Search Fusion Methods for Video Database Retrieval**," *IEEE Intl. Conf. on Image Processing*, Barcelona, Sep. 2003.
9. Dongqing Zhang, Belle L. Tseng, Ching-Yung Lin and Shih-Fu Chang, "**Accurate Overlay Text Extraction for Digital Video Analysis**," *IEEE Intl. Conf. on Information Technology: Research and Education*, Newark, Aug. 2003.
10. Harriet Nock, Giri Iyengar, Ching-Yung Lin, Milind Naphade, Apostol Natsev, Chalapathy Neti, John R. Smith, and Belle L. Tseng, "**User-trainable Video Annotation using Multimodal Cues**," *ACM SIGIR*, Toronto, Canada, July 2003.
11. Ching-Yung Lin, Belle L. Tseng and John R. Smith, "**VideoAnnEx: IBM MPEG-7 Annotation Tool for Multimedia Indexing and Concept Learning**," *IEEE Intl. Conf. on Multimedia & Expo*, Baltimore, July 2003.
12. Belle L. Tseng, Ching-Yung Lin, Dongqing Zhang and John R. Smith, "**Improved Text Overlay Detection in Videos Using a Fusion-Based Classifier**," *IEEE Intl. Conf. on Multimedia & Expo*, Baltimore, July 2003.
13. Milind Naphade, Ching-Yung Lin, Belle L. Tseng, Apostol Natsev and John R. Smith, "**A Framework for Moderate Vocabulary Semantic Video Concept Detection**," *IEEE Intl. Conf. on Multimedia & Expo*, Baltimore, July 2003.
14. Chung-Sheng Li, C. Aggrarwal, M. Campbell, Y.-C. Chang, G. Glass, V. Iyengar, M. Joshi, Ching-Yung Lin, M. Naphade, J. R. Smith, B. L. Tseng, M. Wang, K.-L. Wu, and P. Yu, "**EPI-SPIRE: A Bio-Surveillance System for Environmental and Public Health Activity Monitoring**," *IEEE Intl. Conf. on Multimedia & Expo*, Baltimore, July 2003.

Journal/Magazine Papers

15. Ching-Yung Lin and Shih-Fu Chang, "**Robust Digital Signature for Multimedia Content Authentication: A Summary**," *IEEE Circuits and Systems Magazine*, October 2003.
16. Bill Adams, Giri Iyengar, Ching-Yung Lin, Milind Naphade, Chalapathy Neti, Herriet Nock and John R. Smith, "**Semantic Indexing of Multimedia Content Using Visual, Audio and Text Cues**," *EURASIP Journal on Applied Signal Processing*, 2003

Book Chapters

17. John. R. Smith, Ching-Yung Lin, Milind Naphade, Apostol Natsev and Belle L. Tseng, "**Statistical Techniques for Video Analysis and Searching**," in *Video Mining*, Chapter 9, Kluwer Academic Publishers, 2003.

[2002]:

Conference Papers

1. Ching-Yung Lin and Belle L. Tseng, "**Segmentation, Classification, and Watermarking for Multimedia Semantic Authentication**," *IEEE Intl. Workshop on Multimedia Signal Processing*, US Virgin Islands, Dec. 2002.
2. Belle L. Tseng and Ching-Yung Lin, "**Personalized Video Summary using Visual Semantic Annotations and Automatic Speech Transcriptions**," *IEEE Intl. Workshop on Multimedia Signal Processing*, US Virgin Islands, Dec. 2002.
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