

HANGZAI LUO

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RESEARCH AREA

Computer Vision, Multimedia Retrieval, Machine Learning, Multimedia Database, Visual Analytics.

EDUCATION

Doctor of Philosophy, Information Technology

2002–2007 University of North Carolina at Charlotte, Dept. of Computer Science Charlotte, USA

Dissertation: Concept-Based Large-Scale Video Database Browsing and Retrieval via Visualization

Adviser: Dr. Jianping Fan

Bachelor of Science, Computer Science

1994–1998 Fudan University, Dept. of Computer Science

Shanghai, China

EXPERIENCE

2007.9-date Associate Professor East China Normal University Shanghai, China

Research on massive data processing.

Taught courses for students major in Computer.

2007.1-2007.5 Postdoctor UNC-Charlotte Charlotte, USA

Research on large scale TV news video database retrieval.

Research on video processing and visualization.

2005.9-2005.11 Intern National Institute of Informatics Tokyo, Japan

Research on large scale TV news video database retrieval.

2005.5-2005.8 Intern Motorola Research Lab Schuamburg, USA

Research on web news analysis and visualization.

Built web news parsing and extraction system.

2002-2006 Research Assistant UNC-Charlotte Charlotte, USA

Research on multimedia database retrieval.

1998-2002 Lecture Fudan University Shanghai, China

Research on high-dimensional data indexing and video processing.

Taught course “Experiments of Machine Structure”.

AWARDED FUNDING

- Research on the Next Generation Search Engine via Visual Recommendation and Massive Data Mining, Shanghai Pujiang Program under 08PJ1404600, 2008-2010.
- Research on Image Retrieval via Visual Recommendation, National Science Foundation of China under 60803077, 2009-2011.

PARTICIPATED PROJECTS

- Research on Basic Algorithms and Key Technologies for Supporting Chinese WEB Infrastructure Construction, China NSF key project, 2009-2011.
- Research on Key Technologies for Multi-Modal Digital Media Material Database, Science and Technology Commission of Shanghai Municipality Project, 2007-2009.
- A Novel Approach to Video Database Indexing via Semantic Classification, USA NSF IDM 0208539, 2002-2005.
- SGER: Exploratory Investigation of Hierarchical Image Classification and Database Indexing, USA IIS NSF 0601542, 2006-2007.
- SouthEast Regional Visualization and Analytics Center, A Branch of USA DHS National Visualization and Analytics Center, started in 2005.
- Research and Development of a Feature-Based Multimedia Information Retrieval System, China 863-317 project, 1997-1998.
- A Multimedia Communication System on Internet, China 863-317-9604-01, 1997-1998.
- Research on Very Low Bitrate Motion Picture Encoding, China NSF 69602003, 1996-1999.
- Research on Key Technologies of Video Retrieve, China 863-317-01-07-99, 1999-2000.
- Research on Key Technologies of Video Retrieve, China NSF key project 69935010, 2000-2003.

HONORS

- Excellent paper award, “Shanghai Expo and City Surveillance” Security Forum, 2007.
- Second place of director of research’s award, U.S. Department of Homeland Security annual university network summit on research and education, 2007.
- Best paper candidate, ACM Multimedia, 2004.

JOURNAL PUBLICATIONS

- [1] **Hangzai Luo**, Yuli Gao, Xiangyang Xue, Jinye Peng, and Jianing Fan. Incorporating feature hierarchy and boosting for concept-oriented video summarization and skimming. *ACM Trans. on Multimedia Computing Communications and Applications*, 4(1):1–25, 2008.
- [2] **Hangzai Luo**, Jianping Fan, Shin’ichi Satoh, Jing Yang, and William Ribarsky. Integrating multi-modal content analysis and hyperbolic visualization for large-scale news video retrieval and exploration. *Signal Processing:Image Communication*, 23(7):538–553, 2008.
- [3] **Hangzai Luo**, Jianping Fan, Xiaodong Lin, Aoying Zhou, and Elisa Bertino. A distributed approach to enabling privacy-preserving model-based classifier training. *Knowledge and Information Systems*, 2008. (Accepted).
- [4] Jianping Fan, Yuli Gao, **Hangzai Luo**, and Ramesh Jain. Mining multi-level image semantics via hierarchical classification. *IEEE Trans. on Multimedia*, 10(2):167–187, Feb. 2008.
- [5] Jianping Fan, Yuli Gao, and **Hangzai Luo**. Integrating concept ontology and multitask learning to achieve more effective classifier training for multilevel image annotation. *IEEE Trans. on Image Processing*, 17:407–426, 2008.
- [6] Jianping Fan, Daniel Keim, Yuli Gao, **Hangzai Luo**, and Zongmin Li. Justclick: Personalized image recommendation via exploratory search from large-scale flickr images. *IEEE Trans. on CSVT*, 18, 2008.
- [7] Jianping Fan, **Hangzai Luo**, Yuli Gao, and Ramesh Jain. Incorporating concept ontology to boost hierarchical classifier training for automatic multi-level video annotation. *IEEE Trans. on Multimedia*, 9(5):939–957, 2007.
- [8] Jianping Fan, Yuli Gao, **Hangzai Luo**, and Guangyou Xu. Statistical modeling and conceptualization of natural images. *Pattern Recognition*, 38(6):865–885, June 2005.

- [9] Jianping Fan, **Hangzai Luo**, and Ahmed K. Elmagarmid. Concept-oriented indexing of video database toward more effective retrieval and browsing. *IEEE Trans. on Image Processing*, 13(7):974–992, 2004.

CONFERENCE PUBLICATIONS

- [1] **Hangzai Luo**, Jianping Fan, and Daniel A. Keim. “Personalized news video recommendation”. In *ACM Multimedia*, 2008. (Demo).
- [2] **Hangzai Luo**, Jianping Fan, Daniel A. Keim, and Shin’ichi Satoh. “Personalized news video recommendation”. In *Multimedia Modeling*, 2009.
- [3] **Hangzai Luo**, Jiahang Yang, Aoying Zhou, Jianping Fan, and Tianming Hu. “Knowledge mining and visualization on news webpages and large-scale news video database”. In *The First IFIP International Workshop on Distributed Knowledge Management*, 2008.
- [4] Jianping Fan, **Hangzai Luo**, Aoying Zhou, and Daniel A. Keim. “Personalized news video recommendation via interactive exploration”. In *International Symposium on Visual Computing*, 2008.
- [5] Jianping Fan, Yuli Gao, **Hangzai Luo**, and Shin’ichi Satoh. “New approach for hierarchical classifier training and multi-level image annotation”. In *International Multimedia Modeling Conference (MMM)*, pages 45–57, 2008.
- [6] Yuli Gao, Jianping Fan, **Hangzai Luo**, and Shin’ichi Satoh. “A novel approach for filtering junk images from google search results”. In *International Multimedia Modeling Conference (MMM)*, pages 1–12, 2008.
- [7] Jianping Fan, Yuli Gao, **Hangzai Luo**, Daniel A. Keim, and Zongmin Li. “A novel approach to enable semantic and visual image summarization for exploratory image search”. In *MIR*, 2008.
- [8] Jianping Fan, Yuli Gao, and **Hangzai Luo**. “Hierarchical classification for automatic image annotation”. In *ACM SIGIR*, 2007.
- [9] **Hangzai Luo**, Jianping Fan, Jing Yang, William Ribarsky, and Shin’ichi Satoh. “Analyzing large-scale news video databases to support knowledge visualization and intuitive retrieval”. In *IEEE Symposium on Visual Analytics Science and Technology*, 2007.
- [10] **Hangzai Luo**, Jianping Fan, Shin’ichi Satoh, and Xiangyang Xue. “Mining large-scale news video database via knowledge visualization”. In *VISUAL*, 2007.
- [11] **Hangzai Luo**, Jianping Fan, Shin’ichi Satoh, and William Ribarsky. “Large scale news video database browsing and retrieval via information visualization”. In *ACM Symposium on Applied Computing (SAC)*. Seoul, Korea, 2007.
- [12] **Hangzai Luo**, Jianping Fan, and William Ribarsky. “Exploring large-scale news and surveillance videos for protecting homeland security”. In *Homeland Security Stakeholders Conference Poster Session*, 2007.
- [13] **Hangzai Luo**, Jianping Fan, Jing Yang, and William Ribarsky. “Exploring large-scale news video databases via visual analysis”. In *Student Poster of Annual DHS University Network Summit on Research and Education*, 2007.
- [14] **Hangzai Luo**, Jianping Fan, Jin Yang, William Ribarsky, and Shin’ichi Satoh. “Exploring large-scale video news via interactive visualization”. In *IEEE Symposium on Visual Analytics Science and Technology*, pages 75–82, 2006.
- [15] Jing Yang, Jianping Fan, Daniel Hubball, Yuli Gao, **Hangzai Luo**, William Ribarsky, and Matthew Ward. “Semantic image browser: Bridging information visualization with automated intelligent image analysis”. In *IEEE Symposium on Visual Analytics Science and Technology*, pages 191–198, 2006.
- [16] **Hangzai Luo** and Jianping Fan. “Large-scale video retrieval via semantic classification”. In *ACM Multimedia Doctoral Symposium*, pages 884–886. Santa Barbara, USA, 2006.
- [17] **Hangzai Luo**, Jianping Fan, Yuli Gao, Shin’ichi Satoh, and William Ribarsky. “Large-scale news video retrieval via visualization”. In *ACM Multimedia*, pages 783–784. Santa Barbara, USA, 2006.

- [18] **Hangzai Luo** and Jianping Fan. “Building concept ontology for medical video annotation”. In *ACM Multimedia*, pages 57–60. Santa Barbara, USA, 2006.
- [19] Yuli Gao, Jianping Fan, **Hangzai Luo**, Xiangyang Xue, and Ramesh Jain. “Automatic image annotation by incorporating feature hierachy and boosting to scale up svm classifiers”. In *ACM Multimedia*, pages 901–910. Santa Barbara, USA, 2006.
- [20] Yuli Gao, **Hangzai Luo**, and Jianping Fan. “Searching and browsing large scale image database using keywords and ontology”. In *ACM Multimedia*, pages 811–812. Santa Barbara, USA, 2006.
- [21] **Hangzai Luo**, Jianping Fan, Shin’chi Satoh, and William Ribarsky. “Interactive visualization for news retrieval”. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR) VideoProgram*. New York, USA, 2006.
- [22] Jianping Fan, **Hangzai Luo**, Yuli Gao, and Mohand-Said Hacid. “Mining images on semantics via statistical learning”. In *ACM KDD Conference*, pages 22–31. Chicago, USA, 2005.
- [23] Jianping Fan, **Hangzai Luo**, and Yuli Gao. “Learning the semantics of images by using unlabeled samples”. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, pages 704–710. San Diego, USA, 2005.
- [24] Jianping Fan, **Hangzai Luo**, Mohand-Said Hacid, and Elisa Bertino. “A novel approach for privacy-preserving video sharing”. In *ACM Conference on Information and Knowledge Management (CIKM)*, pages 609–616. Bremen, Germany, 2005.
- [25] **Hangzai Luo** and Jianping Fan. “Concept-oriented video skimming and adaptation via semantic classification”. In *ACM Multimedia Workshop on Multimedia Information Retrieval (MIR)*, pages 213–220, 2004.
- [26] **Hangzai Luo** and Jianping Fan. “Concept-oriented video skimming via semantic video classification”. In *ACM Multimedia*, pages 760–761. New York, USA, 2004.
- [27] Jianping Fan, Yuli Gao, and **Hangzai Luo**. “Multi-level annotation of natural scenes using dominant image components and semantic image concepts”. In *ACM Multimedia*, pages 540–547, 2004.
- [28] Jianping Fan and **Hangzai Luo**. “Semantic video classification by integrating unlabeled samples for classifier training”. In *ACM SIGIR Conference*, pages 592–593. Sheffield, UK, 2004.
- [29] Jianping Fan, Yuli Gao, **Hangzai Luo**, and Guangyou Xu. “Automatic image annotation by using concept-sensitive salient objects for imagecontent representation”. In *ACM SIGIR Conference*, pages 361–368. Sheffield, UK, 2004.
- [30] **Hangzai Luo**, Jianping Fan, Yuli Gao, and Guangyou Xu. “Multimodal salient objects: General building blocks of semantic video concepts”. In *International Conference on Image and Video Retrieval (CIVR)*, pages 374–383. Dublin, Ireland, 2004.
- [31] Jianping Fan, **Hangzai Luo**, and Lide Wu. “Integrating unlabeled samples for feature subset selection and semantic video classification”. In *Asian Conference on Computer Vision (ACCV)*, pages 33–39. Jeju Island, Korea, 2004.
- [32] Jianping Fan, **Hangzai Luo**, Jing Xiao, and Lide Wu. “Semantic video classification and feature subset selection under context and concept uncertainty”. In *Joint Conference on Digital Libraries (JCDL)*, pages 192–201. Tuson, USA, 2004.
- [33] Jianping Fan, Yuli Gao, **Hangzai Luo**, and Guangyou Xu. “Salient objects: Semantic building blocks for image concept interpretation”. In *International Conference on Image and Video Retrieval (CIVR)*, pages 365–373. Dublin, Ireland, 2004.
- [34] **Hangzai Luo**, Yuli Gao, Zhaoyu Liu, and Jianping Fan. “Semantic video classification with insufficient labeled samples”. In *SPIE Storage and Retrieval of Media Database*, pages 340–350. San Jose, USA, 2004.
- [35] **Hangzai Luo**, Jianping Fan, Jing Xiao, and Xingquan Zhu. “Multimodal principal video shot classification via mixture gaussian”. In *IEEE International Conference on Multimedia and Expo (ICME)*, pages 189–192. Baltimore, USA, 2003.

- [36] Jianping Fan and **Hangzai Luo**. “Principal video shot: Linking low-level multimodal perceptual features to semantic video events”. In *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, page 37. Madison, USA, 2003.
- [37] Jianping Fan, **Hangzai Luo**, and Xiaodong Lin. “Semantic video classification by integrating flexible mixture model with adaptive em algorithm”. In *ACM Multimedia Workshop on Multimedia Information Retrieval (MIR)*, pages 9–16. Berkeley, USA, 2003.
- [38] Jianping Fan, **Hangzai Luo**, and Xingquan Zhu. “Classview: Semantic principal video shot classification system”. In *ACM Multimedia Workshop on Multimedia Information Retrieval (MIR)*, pages 11–14. Juan Les Pins, France, 2002.
- [39] Xingquan Zhu, Jianping Fan, **Hangzai Luo**, and Mohand-Said Hacid. “Using small samples for content-based image retrieval system with relevance feedback”. In *ACM Multimedia Workshop on Multimedia Information Retrieval (MIR)*, pages 23–27. Juan Les Pins, France, 2002.
- [40] Daoguo Dong, Xiangyang Xue, **Hangzai Luo**, and Yingqiang Lin. “Angle-tree: a new index structure for high-dimensional point data”. In *SPIE Storage and Retrieval for Media Databases*, pages 41–48. San Jose, USA, 2001.
- [41] Xiangyang Xue, **Hangzai Luo**, and Lide Wu. “Index point data using algebraic lattice”. In *SPIE Storage and Retrieval for Media Database*, pages 271–281, 2000.
- [42] Xiangyang Xue, **Hangzai Luo**, and Lide Wu. “Lattice-trie: A new indexing structure for range query”. In *International Workshop on Multimedia Data Storage, Retrieval, Integration and Applications*, 2000.
- [43] Xiangyang Xue, **Hangzai Luo**, and Lide Wu. “Index point data using lattice vector quantization and hash”. In *International Workshop on Very Low Bitrate Video Coding*. Kyoto, JAPAN, 1999.
- [44] Xiangyang Xue, **Hangzai Luo**, Xueqing Chen, and Lide Wu. “A new way to reduce candidate blocks for block matching motion estimation”. In *International Symposium on Signal Processing and its Applications (ISSPA)*, pages 275–278. Brisbane, Australia, 1999.
- [45] Xiangyang Xue, **Hangzai Luo**, and Lide Wu. “Image retrieval using color features”. In *SPIE Storage and Retrieval for Media Database*, pages 1–6. Beijing, China, 1998.