

Wan-Lei Zhao

Associate Professor

at Computer Science Department,
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Education

- Aug. 2007 – Sep. 2010 **Ph.D in Computer Science**, *City University of Hong Kong*, GPA: 3.1/4.3.
Ph.D thesis, *Algorithms and Techniques on Large-scale Near-duplicate Video Mining*.
Advisor, *Dr. Chong-Wah Ngo*.
- Oct. 2003 – Oct. 2004 **Visiting Student**, *Institute of Software, Chinese Academy of Sciences*, Beijing.
Advisor, *Prof. Ming-Shu Li*.
- Sep. 2002 – Dec. 2005 **Master in Computer Science**, *Yunnan University*, GPA: 4.0/5.
Master thesis, *Research on Typical Clustering Algorithms and their Applications*.
Advisor, *Prof. Xue-Jie Zhang*.
- Aug. 1998 – Jul. 2002 **Bachelor in Computer Science**, *Yunnan University*, GPA: 4.25/5.

Research Interests

Multimedia Processing, Computer Vision, Information Retrieval

Journal Paper

- ◇ **Wan-Lei Zhao**, Chong-Wah Ngo, Hanzi Wang: **Fast Covariant VLAD**, *IEEE Trans. on Multimedia*, **accepted**, 2016.
- ◇ Jun Wang, Hanzi Wang, **Wan-Lei Zhao**: **Affine Hull based Target Representation for Visual Tracking**, *Journal of Visual Communication and Image Representation*, vol.30, 2015.
- ◇ Feng Wang, **Wan-Lei Zhao**, Chong-Wah Ngo, Bernard Merialdo: **A Hamming Embedding Kernel with Informative Bag-of-Visual-Words for Video Semantic Indexing**, *ACM Trans. on Multimedia Computing, Communications and Applications* 10(3): 26, 2014.
- ◇ **Wan-Lei Zhao**, Chong-Wah Ngo: **Flip-Invariant SIFT for Copy and Object Detection**, *IEEE Trans. on Image Processing*, 22(3): 980–991, 2013. (citations: 56+)
- ◇ **Wan-Lei Zhao**, Xiao Wu, Chong-Wah Ngo: **On the Annotation of Web Videos by Efficient Near-duplicate Search**, *IEEE Trans. on Multimedia*, 12(5):448–461, 2010. (citations: 110+)
- ◇ **Wan-Lei Zhao**, Chong-Wah Ngo: **Scale-Rotation Invariant Pattern Entropy for Keypoint-based Near-Duplicate Detection**, *IEEE Trans. on Image Processing*, 18(2): 412–423, 2009. (citations: 110+)
- ◇ **Wan-Lei Zhao**, Chong-Wah Ngo, Hung-Khoon Tan, Xiao Wu: **Near-Duplicate Keyframe Identification with Interest Point Matching and Pattern Learning**, *IEEE Trans. on Multimedia*, 9(5): 1037–1048, 2007. (citations: 167+)

◇ Xiao Wu, Chong-Wah Ngo, and **Wan-Lei Zhao**: **Data-Driven Approaches Towards Community-Contributed Video Applications**, *IEEE MultiMedia*, 17(4): 58–69, Jun. 2010.

Conference Paper

◇ **Wan-Lei Zhao**, Guillaume Graviér, Hervé Jégou: **Oriented pooling for dense and non-dense rotation-invariant features**, *BMVC*, Sep. 2013.

◇ **Wan-Lei Zhao**, Hervé Jégou, Guillaume Graviér: **Sim-Min-Hash: An efficient matching technique for linking large image collections**, *ACM MM*, Oct. 2013.

◇ **Wan-Lei Zhao**, Wonmin Byeon, Thomas M. Breuel: **On the Detection and Matching of Local Structures on Texture-less Objects**, *VISAPP*, Feb. 2013.

◇ **Wan-Lei Zhao**, Damian Borth, Thomas M. Breuel: **Participation at TRECVID 2011 Semantic Indexing & Content-based Copy Detection Tasks**, NIST TRECVID Workshop, Gaithersburg, USA, Dec. 2011. (Oral, citations: 2+)

◇ **Wanlei Zhao**, Yu-Gang Jiang, Chong-Wah Ngo: **Keyframe Retrieval by Keypoints: Can Point-to-Point Matching Help?** International Conference on Image and Video Retrieval, July, 2006: pp.72–81. (Oral, citations: 61+)

◇ **Wan-Lei Zhao**, Song Tan, and Chong-Wah Ngo: **Large-scale Near-duplicate Web Video Search: Challenge and Opportunity**, Int'l Conference on Multimedia & Expo, Workshop on Internet Multimedia Search and Mining, Cancun, Mexico, Jul. 2009. (Oral, citations: 10+)

◇ Yang Liu, **Wanlei Zhao**, Chong-Wah Ngo, Changsheng Xu, Hanqing Lu: **Coherent bag-of audio words model for efficient large-scale video copy detection**, *CIVR* 2010. (citations: 10+)

◇ Xiao Wu, **Wan-Lei Zhao**, and Chong-Wah Ngo: **Towards Google Challenge: Combining Contextual and Social Information for Web Video Categorization**, ACM International Conference on Multimedia (ACM MM'09), Multimedia Grand Challenge, Beijing, Oct. 2009. (citations: 14+)

◇ Xiao Wu, **Wan-Lei Zhao**, and Chong-Wah Ngo: **Near-Duplicate Keyframe Retrieval with Visual Keywords and Semantic Context**, Proceedings of ACM International Conference on Image and Video Retrieval (ACM CIVR'07), Netherlands, Jul. 2007. (citations: 50+)

◇ Xiao Wu, **Wan-Lei Zhao**, and Chong-Wah Ngo: **Efficient Near-Duplicate Keyframe Retrieval with Visual Language Models**, Proceedings of IEEE International Conference on Multimedia & Expo, Beijing, Jul. 2007.

◇ Chong-Wah Ngo, **Wan-Lei Zhao**, Yu-Gang Jiang: **Fast Tracking of Near-Duplicate Keyframes in Broadcast Domain with Transitivity Propagation**, *ACM Multimedia*, Oct. 2006: pp.845–854. (Oral, citations: 84+)

◇ Yu-Gang Jiang, **Wan-Lei Zhao**, Chong-Wah Ngo: **Exploring Semantic Concepts Using Local Invariant Features**, Asia-Pacific Workshop on Visual Information Processing, Nov. 7-9, 2006.

◇ Hung-Khoon Tan, Xiao Wu, Chong-Wah Ngo, and **Wan-Lei Zhao**: **Accelerating Near-Duplicate Video Matching by Combining Visual Similarity and Alignment Distortion**, *ACM Multimedia*, Canada, Oct. 2008. (citations: 23+)

◇ Chong-Wah Ngo, Yu-Gang Jiang, Xiao-Yong Wei, **Wan-Lei Zhao**, Yang Liu, Jun Wang, Shiai Zhu, Shih-Fu Chang: **VIREO/DVMM at TRECVID 2009: High-Level Feature Extraction, Automatic Video Search, and Content-Based Copy Detection**, NIST TRECVID Workshop, Gaithersburg, MD, USA, Nov. 17-18, 2009.

◇ Chong-Wah Ngo, Yu-Gang Jiang, Xiao-Yong Wei, **Wan-Lei Zhao**, Feng Wang, Xiao Wu, H. K. Tan: **Beyond Semantic Search: What You Observe May Not Be What You Think**, NIST TRECVID Workshop, Gaithersburg, MD, USA, Nov. 17-18, 2008.

Book Chapter

◇ **Wan-Lei Zhao**, Chong-Wah Ngo: **Near-Duplicate Image and Video Detection**. *Wiley Encyclopedia of Electrical and Electronics Engineering*, John & Wiley publisher, 2015.
◇ Xiao Wu, **Wan-Lei Zhao**, Chong-Wah Ngo, and Alexander Hauptmann: **Near-Duplicate Web Video Detection**. *Internet Multimedia Search and Mining*, Bentham Science Publishers, 2010.

Co-Investigator of Projects

2012-2013 **QUAERO**, French Innovation Agency, Germany.
2011-2012 **SICURA: Large scale object recognition and image database retrieval with applications to security X-ray images**, *Project No. FKZ 13N11125*, Federal Ministry for Education and Research, Germany.
2010-2012 **Classifier-free Video Annotation by Online Multimedia Resources**, *Project No. 700248*, Strategic Research Grant of City University of Hong Kong.

Honors and Awards

Apr. 2010 **Outstanding Academic Performance Award**, at *City University of Hong Kong*.
Apr. 2010 **Research Tuition Scholarship**, at *City University of Hong Kong*.
Aug. 2009 **Research Tuition Scholarship**, at *City University of Hong Kong*.
Aug. 2007 - Aug. 2010 **Postgraduate Studentship**, at *City University of Hong Kong*.
Oct. 2001 **National Mathematical Contest in Modeling**, *Accessit*, at Yunnan University.
May 2001 **Scholarship for Outstanding Student**, *Major award*, at Yunnan University.
May 2000 **Scholarship for Outstanding Student**, *Third-class prize*, at Yunnan University.

Software Projects

2007 – 2016 **LIP-VIREO**, Local Interest Point Feature Extraction Toolkit.
Homepage, <http://pami.xmu.edu.cn/~wlzhao/lip-vireo.htm>.
Downloads:, 9,500+ *Jul. 2009 - Jul. 2015*.

Professional Service

Reviewer **IEEE Transactions** on Pattern Analysis and Machine Intelligence, International Journal of Computer Vision, **IEEE Transactions** on Multimedia, **IEEE Transactions** on Image Processing, **IEEE Transactions** on Information Forensics and Security, Optical Engineering, **IEEE Multimedia**, Signal Processing: Image Communication, Mathematical Reviews (American Mathematical Society)
Consultant **Beautifeye.co** (in Ireland), **ODD Concepts Inc.** (in South Korea) since Mar. 2014
Programme Committee The 16th Pacific-Asia Conference on Knowledge Discovery and Data Mining, Jun. 2012
The 2013 Pacific-Rim Conference on Multimedia, Dec. 2013

Teaching Experience

- Semester A. 2015 **Lecturer**, *C Programming*, (Xiamen University, in Chinese).
Semester B. 2015 **Lecturer**, *Mathematic Analysis with Matlab*, (Xiamen University, in English).
Semester A. 2015 **Lecturer**, *Multimedia Technology*, (Xiamen University, in English).
Semester B. 2011 **Lecturer**, *Multimedia Analysis and Datamining*, (TU-KL, in English).
Semester A. 2011 **Lecturer**, *Multimedia Information Retrieval*, (TU-KL, in English).

Work Experience

- Jul. 2012 – Dec. 2013 **Post-doc**, *INRIA, Bretagne-Atlantic*, France.
Feb. 2011 – Jun. 2012 **Post-doc**, *University of Kaiserslautern*, Germany.
Sep. 2010 – Jan. 2011 **Senior Research Associate**, *City University of Hong Kong*, Hong Kong SAR.
Dec. 2005 – Jul. 2007 **Research Assistant**, *City University of Hong Kong*, Hong Kong SAR.
Aug. 2005 – Nov. 2005 **Administrator of SGI server**, *High Performance Computing Center, Yunnan University*.
Mar. 2005– Aug. 2005 **Research Assistant**, *City University of Hong Kong*.

Computer Skills

OS	Linux, Unix and Windows
Programming	C/C++, C#, JAVA, Matlab, Python
Programming IDE	Microsoft Visual Studio .Net, Eclipse, CodeBlocks
Database	MySQL, SQL Sever, Oracle
Certificate	Certified Software Programmer

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Language Proficiency

English	Advanced level
German	Beginner level (A1)

Reference

Available upon request.