Wan-Lei Zhao

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Wan-Lei Zhao received his doctor degree from City University of Hong Kong in 2010. After three-year postdoc research in the research institutes in Germany and France, he works with Xiamen University as an *associate professor* since *Sep. 2014*. He serves as the lecturer for three courses, a full-time researcher as well as a graduate student supervisor in the computer science department.

Education

Aug. 2007 – Sep. 2010	**Ph.D in Computer Science**, *City University of Hong Kong*.
Oct. 2003 – Oct. 2004	**Exchange Student**, *Institute of Software, Chinese Academy of Sciences*, Beijing.
Sep. 2002 – Dec. 2005	**Master in Computer Science**, *Yunnan University*.
Aug. 1998 – Jul. 2002	**Bachelor in Computer Science**, *Yunnan University*.

Work Experience

Sep. 2014 – Present	**Associate Professor**, *Xiamen University*, P.R. China.
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.
Mar. 2005 – Jul. 2007	**Research Assistant**, *City University of Hong Kong*, Hong Kong SAR.

Selected Journal Paper

◇ 1. **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. (IF=11.041, CCF A)

◇ 2. **Wan-Lei Zhao**, Chong-Wah Ngo: **Flip-Invariant SIFT for Copy and Object Detection**, *IEEE Trans. on Image Processing*, 22(3): 980–991, 2013. (IF=11.041, CCF A)

◇ 3. **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. (IF=8.18, CCF B)

◇ 4. **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. (IF=8.18, CCF B)

◇ 5. **Wan-Lei Zhao**, Chong-Wah Ngo, Hanzi Wang*: **Fast Covariant VLAD**, *IEEE Trans. on Multimedia*, 18(9): 1843–1854, 2016. (IF=8.18, CCF B)

◇ 6. **Wan-Lei Zhao***, Hui Wang, Chong-Wah Ngo: **Approximate *k*-NN Graph Construction: a Generic Online Approach**, *IEEE Trans. on Multimedia*, 1909–1921, vol.24, 2022. (IF=8.18, CCF B)

◇ 7. Hui-Chu Xiao, Jie Lin,**Wan-Lei Zhao***, Yi-Geng Hong, Chong-Wah Ngo: **Deeply Activated Salient Region for Instance Search**, *ACM Trans. on Multimedia Computing Communications and Applications*, 2022. (IF=4.09, CCF B)

◇ 8. Wei Chen, Jie Zhao,**Wan-Lei Zhao***, Song-Yuan Wu: **Shape-Aware Monocular 3D Object Detection**, *IEEE Trans. on Intelligent Transportation Systems*, 2023. (IF=9.551, CCF B)

◇ 9. **Wan-Lei Zhao***, Hui Wang, Peng-Cheng Lin, Chong-Wah Ngo: **On the Merge of KNN Graph**, *IEEE Trans. on Big Data*, 2021. (IF=7.5, CCF C)

◇ 10. Jie-Feng Wang, **Wan-Lei Zhao***, Shihai Xiao, Jiajie Yao, Xuecang Zhang: **Dynamic NN-Descent: An Efficient k-NN Graph Construction Method**, *IEEE Trans. on Big Data* to appear, 2024. (IF=7.5, CCF C)

◇ 11. **Wan-Lei Zhao***, Cheng-Hao Deng, Chong-Wah Ngo: ***k*-means: a revisit**, *Neurocomputing*, 291, 195–206, 2018. (IF=5.779, CCF C)

◇ 12. Jie Lin, Yu Zhan, **Wan-Lei Zhao***: **Instance Search based on Weakly Supervised Feature Learning**, *Neurocomputing*, 117–124, 2021. (IF=5.779, CCF C)

◇ 13. Run-Qing Chen, Guang-Hui Shi, **Wan-Lei Zhao***, Chang-Hui Liang: **A Joint Model for IT Operation Series Prediction and Anomaly Detection**, *Neurocomputing*, 448(2021), 130–139. (IF=5.779, CCF C)

◇ 14. Yu Zhan, **Wan-Lei Zhao***: **Instance Search via Instance Level Segmentation and Feature Representation**, *Journal of Visual Communication and Image Representation*, vol.79, 2021. (IF=2.678, CCF C)

◇ 15. Chang-Hui Liang, **Wan-Lei Zhao***, Run-Qing Chen: **Dynamic Sampling for Deep Metric Learning**, *Pattern Recognition Letters*, 150 (2021), 49–56. (IF=4.757, CCF C)

Selected Conference Paper

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

◇ 2. **Wan-Lei Zhao**, Hervé Jégou, Guillaume Gravier: **Sim-Min-Hash: An efficient matching technique for linking large image collections**, *ACM Int. Conf. on Multimedia*, Oct. 2013. (CCF A)

◇ 3. Yi-Geng Hong, Hui-Chu Xiao, **Wan-Lei Zhao***: **Towards Accurate Object Localization by Instance Search**, *ACM Int. Conf. on Multimedia*, Oct. 2021. (Oral, CCF A)

◇ 4. Cheng-Hao Deng, **Wan-Lei Zhao***: **Fast *k*-means clustering based on *k*-NN graph**, *Int. Conf. on Data Engineering*, poster, Apr. 2018. (CCF A)

◇ 5. Xiao Wu, **Wan-Lei Zhao**, and Chong-Wah Ngo: **Towards Google Challenge: Combining Contextual and Social Information for Web Video Categorization**, *ACM Int. Conf. on Multimedia*, Multimedia Grand Challenge, Beijing, Oct. 2009. (CCF A)

◇ 6. **Wan-Lei Zhao**, Yu-Gang Jiang, Chong-Wah Ngo: **Keyframe Retrieval by Keypoints: Can Point-to-Point Matching Help?** *Int. Conf. on Image and Video Retrieval*, July, 2006: pp.72–81. (Oral, CCF B)

◇ 7. **Wan-Lei Zhao**, Song Tan, and Chong-Wah Ngo: **Large-scale Near-duplicate Web Video Search: Challenge and Opportunity**, *IEEE Int. Conf. on Multimedia & Expo, Workshop on Internet Multimedia Search and Mining*, Cancun, Mexico, Jul. 2009. (Oral, CCF B)

◇ 8. Xiao Wu, **Wan-Lei Zhao**, and Chong-Wah Ngo: **Near-Duplicate Keyframe Retrieval with Visual Keywords and Semantic Context**, *ACM Int. Conf. on Image and Video Retrieval*, Netherlands, Jul. 2007. (CCF B)

◇ 9. Yang Liu, **Wan-Lei Zhao**, Chong-Wah Ngo, Changsheng Xu, Hanqing Lu: **Coherent bag-of audio words model for efficient large-scale video copy detection**, *ACM Int. Conf. on Image and Video Retrieval*, 2010. (CCF B)

◇ 10. Gao-Dong Liu, **Wan-Lei Zhao***, Jie Zhao: **Online Deep Metric Learning via Mutual Distillation**, *IEEE Int. Conf. on Multimedia and Expo*, July, 2022. (CCF B, Oral)

◇ 11. Gao-Dong Liu, **Wan-Lei Zhao***, Jie Zhao: **Decoupled Mutual Distillation for Incremental Object Detection**, *IEEE Int. Conf. on Multimedia and Expo*, July, 2023. (CCF B)

◇ 12. Xiao Wu, **Wan-Lei Zhao**, and Chong-Wah Ngo: **Efficient Near-Duplicate Keyframe Retrieval with Visual Language Models**, *IEEE Int. Conf. on Multimedia & Expo*, Beijing, Jul. 2007. (CCF B)

◇ 13. **Wan-Lei Zhao***, Shi-Ying Lan, Run-Qing Chen, Chong-Wah Ngo: ***k*-sums clustering: a stochastic optimization approach**, *30th ACM Int. Conf. on Information and Knowledge Management*, Nov. 2021. (CCF B)

◇ 14. Hui Wang, **Wan-Lei Zhao***, Xiangxiang Zeng, Jianye Yang: **Fast *k*-NN Graph Construction by GPU based NN-Descent**, *30th ACM Int. Conf. on Information and Knowledge Management*, Nov. 2021. (CCF B)

◇ 15. **Wan-Lei Zhao**, Guillaume Gravíer, Hervé Jégou: **Oriented pooling for dense and non-dense rotation-invariant features**, **BMVC**, Sep. 2013. (CCF B)

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.

Certificated Patents

◇ 1. **Wan-Lei Zhao**, et. al: **An Image Representation Method based on Aggregated Covariant Local Feature**. *China National Intellectual Property Administration*, ZL2015 1 0710221.2, 2018.

◇ 2. **Wan-Lei Zhao**, et. al: **A Unsupervised Method for Ops Data Anomaly Detection and Trend Prediction**. *China National Intellectual Property Administration*, ZL2020 1 0746722.7, 2022.

◇ 3. **Wan-Lei Zhao**, et. al: **Method for Encoding on Basis of Mixture of Vector Quanti- zation and Nearest Neighbor Search**. *Japan National Intellectual Property Administration*, 7006996, 2022.

◇ 4. **Wan-Lei Zhao**, et. al: **A Distributed Face Retrieval System and Method**. *China National Intellectual Property Administration*, ZL2020 11 094648.1, 2022.

◇ 5. **Wan-Lei Zhao**, et. al: **An Instance Search Method based on Multiple Channels Attentions**. *China National Intellectual Property Administration*, ZL2020 10 746717.6, 2022.

Research Grants

Apr. 2020 – Oct. 2020 **300,000 RMB**, *Fast Nearest Neighbor Search Oriented to Large-scale Image Feature*, **Boden AI Inc.**, Ningbo, China.

Mar. 2020 – Dec. 2021 **100,000 RMB**, *Object Tracking based on the Fusion of 2D Image and 3D Point Clouds*, **Boden AI Inc.**, Ningbo, China.

Jan. 2020 – Dec. 2023 **580,000 RMB**, *Research on Key Technologies in Large-scale Instance Search*, **National Natural Science Fundation of China**.

Nov. 2018 – Jan. 2020 **270,000 RMB**, *Algorithm Development for Bonree AIOPs*, **Bonree Inc.**, Beijing, China.

Mar. 2016 – Mar. 2017 **100,000 RMB**, *Large-scale Image Search*, **ODD Concepts Inc.**, Seoul, South Korea.

Jan. 2016 – Dec. 2019 **740,000 RMB**, *Research on Key Technologies in Large-scale Content based Image Search and Mining*, **National Natural Science Fundation of China**.

Mar. 2015 – Mar. 2016 **152,000 RMB**, *Large-scale Image Search*, **ODD Concepts Inc.**, Seoul, South Korea.

Honors and Awards

Nov. 2020 **National Level First Class Course**, *C Programming*, National Ministry of Education.

Dec. 2018 **The *13th* Teaching Skill Competition at Xiamen University**, *the 2nd Prize Winner*, Xiamen University, in English.

Aug. 2020 **The *11th* University Student Innovation and Entrepreneurship Service Outsourcing Competition**, *the 2nd Prize Winner*, National Ministry of Education & National Ministry of Business, Supervisor.

Apr. 2009, Apr. 2010 **Outstanding Academic Performance Award**, *City University of Hong Kong*.

Professional Service

Committee Member **ACM Multimedia**, since 2018; **Intl. Conf. on Multimedia & Expro**, since 2016, Associate Editor for **ACM Trans. on Probabilistic Machine Learning**

Consultant **Beautifeye.co** (in Ireland, 2014), **ODD Concepts Inc.** (in South Korea, 2014 – 2016), Boden AI Inc. (in Ningbo, China, 2018 – present)

Teaching Experience

Since 2023 **Convex Optimization: theory and method**, *undergraduate*, (Xiamen University).

2015 – 2022 **C Programming**, *undergraduate*, (Xiamen University).

2015 – 2018 **Mathematical Modeling and Optimization**, *undergraduate*, (Xiamen University).

Since 2015 **Multimedia Technology**, *graduate*, (Xiamen University, in English).

Semester B. 2011 **Multimedia Analysis and Datamining**, *graduate*, (TU-KL, in English).

Semester A. 2011 **Multimedia Information Retrieval**, *graduate*, (TU-KL, in English).