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|  | Gong Zhiguo  鞏志國 ProfessorDepartment of Computer and Information Science |

[Academic Qualifications](http://www.fst.umac.mo/en/staff/fstzgg.html#acadqual) | [Working Experience](http://www.fst.umac.mo/en/staff/fstzgg.html#experience) | [Teaching](http://www.fst.umac.mo/en/staff/fstzgg.html#teaching) | [Research](http://www.fst.umac.mo/en/staff/fstzgg.html#research) | [Selected Publications](http://www.fst.umac.mo/en/staff/fstzgg.html#publications) | [Professional Affiliations](http://www.fst.umac.mo/en/staff/fstzgg.html#affiliation) | [Services](http://www.fst.umac.mo/en/staff/fstzgg.html#services) | [Contact Details](http://www.fst.umac.mo/en/staff/fstzgg.html#contact)

Academic Qualifications

* Ph.D. in Department of Computer Science, Institute of Mathematics, Chinese Academy of Science, China (1998)
* M,S. in Department of Mathematics, Peking University, China (1988)
* B.S. in Department of Mathematics, Hebei Normal University, China (1983)

Working Experience

* 1983.8 - 1995.8:  Lecturer, Hebei Normal University, China
* 1998.9-1998.11: Postdoc, Institute of Software, Chinese Academy of Science
* 1998.11- 1999.8: Project Coordinator, International Institute for Software Technology, United Nations University, Macau
* 1999.9 – Now: Assistant Professor, Associate Professor, Full Professor. IOTSC and FST, Head of CIS Department, University of Macau

Teaching

B.Sc. Courses

1. Introduction to Database Systems
2. Advanced Database Systems

M.Sc. Courses

1. Current Development in Database
2. Distributed Database Management
3. Web Mining
4. Database and Data Mining Technologies

Research

Research Interests

* Machine Learning
* Data Mining
* Database
* Information Retrieval

Recent Research Projects (Since 2002 - present)

**External Grant**

* **Research on key technologies of intelligent operation for urban rail transit** (1/1/2023 – 31/12/2025). GDSTC (Guangdong Science and Technology Department). EF2023-00241-IOTSC. PI.
* **Key Technologies and Applications for Collaborated Data Mining and Rule Deduction for Intelligent Transportation** (1/1/2023 – 1/12/2026). Nansha District. EF2023-00241-IOTSC. PI.
* **Intelligent Object Recognition Techniques for the Complex Environment of the Electronic Fence**(01/03/2021 – 28/02/2023)**.** FDCT(Science and Technology Development Fund of Macao Government), FDCT/0068/2020/AGJ, PI.
* **Guangdong-Macau Joint Laboratory for Advanced and Intelligent Computing**(01/06/2020 – 31/05/2023). Department of Science and Technology of Guangdong Province, GDST(2020B1212030003), PI.
* **Integrated Application of Intelligent Operation and Maintenance Technologies for Hong Kong-Zhuhai-Macao Bridge** (01/12/2019  –  30/11/2022). National Key D&R Program of China (2019YFB1600704),中國科技部, Co-PI.
* **A Hierarchical Categorization Model for Online Events Discovery from Social Media Data** (2019-2021). FDCT (Science and Technology Development Fund of Macao Government), FDCT/0045/2019/A1, PI
* **Online Site Monitoring by Fusing Multiple Data Sources** (2019-2021). Guangzhou Science and Technology Innovation and Development Commission, EF005/FST-GZG/2019/GSTIC. PI.
* **Big Spatio-Temporal Data Fusion and Analytics** (2017 to 2020), FDCT-NSFC (Joint Project of Science and Technology Development Fund of Macao Government and National Natural Science Foundation of China), FDCT/007/2016/AFJ, PI
* **Data Crawling from Web Hidden Databases with KNN Interface** (Sept. 2014 to Sept. 2016), FDCT (Science and Technology Development Fund of Macao Government), FDCT/116/2013/A3, PI.
* **Travel Activity Discovery from Large-Scale Web Albums** (October 2013 to October 2015), FDCT (Science and Technology Development Fund of Macao Government), FDCT/106/2012/A3, PI.
* **Business Information Retrieval System for the Region of Big China** (January 2007 to December 2008), FDCT (Science and Technology Development Found of Macao Government), FDCT/044/2006/A, PI.

**Internal Grant**

* **Self-Learning Data Augmentation for Class - Imbalanced Node Classification**. MYRG-GRG2023-00186-FST-UMDF. PI.
* **Multi-Granular Knowledge Distilling for Crossing City Transfer Learning**. MYRG2022-00192-FST. PI.
* **Online Techniques for Detecting Events and their Relationships from Social Media Data,** MYRG2018-00129-FST, PI.
* **Capturing the Changing Values of Objects in Dynamic Hidden Web Databases** (Jan 2018 – Dec 2020), MYRG2017-00212-FST. PI.
* **City Attractor Discovery from Large Scale Web Album** (September 2015 to August 2018), MYRG2015-00070-FST, PI.
* **Aggregate Estimation in Transaction Databases** (June 2013 to June 2016), MYRG105-FST13-GZG,PI.
* **Deducing trip related information mining web photos meta data** (2011 to 2015), MYRG188-FST11-GZG. PI
* **Efficient Indexing and Querying in Multidimensional Databases using MapReduce.** (2012-2015), UM research project. CI
* **Hot Events Extraction for a Given topic by Temporal Mining the Web** (January 2009 to December 2011)**,** University Research Committee, PI.
* **Automatic Web Document Classification** (January 2008 to December 2009)**,** University Research Committee (*RG066/07-08S/GZG/FST*), PI.
* **Web Mining** (April 2005 to Dec 2007), University Research Committee (*RG084/04-05S/GZG/FST*), PI.
* **Information Retrievals over Multiple Sources** (April 2002 to April 2004), University Research Committee (*RG027/02-03S/GZG/FST*), PI.
* **WWW Multimedia Resource Discovery and Retrieval** (April 2003 to December 2005), 700,000MOP, University Research Committee (*RG064/02-03S/GZG/FST* and *RG010/04-05S/C63/GZG/FST*), PI.

Selected Publications

Journal Papers (Since 2002 - present)

1. [Junyang Chen](https://dblp.org/pid/196/7893.html)https://dblp.org/img/orcid-mark.12x12.png, [Jingcai Guo](https://dblp.org/pid/192/7270.html), [Qin Zhang](https://dblp.org/pid/45/47-11.html)https://dblp.org/img/orcid-mark.12x12.png, [Kaishun Wu](https://dblp.org/pid/34/4445.html), [Liangjie Zhang](https://dblp.org/pid/20/2065.html), [Victor C. M. Leung](https://dblp.org/pid/36/4847.html), [Huan Wang](https://dblp.org/pid/70/6155-5.html), Zhiguo Gong: **Unveiling user interests: A deep user interest exploration network for sequential location recommendation.** [Inf. Sci. 689](https://dblp.org/db/journals/isci/isci689.html#ChenGZWZLWG25): 121416 (2025).
2. [Quanlong Guan](https://dblp.org/pid/61/7717.html), [Xinghe Cheng](https://dblp.org/pid/271/5999.html), [Fang Xiao](https://dblp.org/pid/08/8456.html), [Zhuzhou Li](https://dblp.org/pid/393/7339.html), [Chaobo He](https://dblp.org/pid/126/8012.html), [Liangda Fang](https://dblp.org/pid/133/1691.html), [Guanliang Chen](https://dblp.org/pid/130/8119.html), Zhiguo Gong, [Weiqi Luo](https://dblp.org/pid/50/4115-2.html): **Explainable exercise recommendation with knowledge graph.** [Neural Networks 183](https://dblp.org/db/journals/nn/nn183.html#GuanCXLHFCGL25): 106954 (2025).
3. [Aimin Sun](https://dblp.org/pid/214/7289.html)https://dblp.org/img/orcid-mark.12x12.png, Zhiguo Gonghttps://dblp.org/img/orcid-mark.12x12.png: **Temporal Graph Multi-Aspect Embeddings.** [IEEE Trans. Knowl. Data Eng. 36(11)](https://dblp.org/db/journals/tkde/tkde36.html#SunG24): 7102-7114 (2024).
4. [Mengting Zhou](https://dblp.org/pid/341/1455.html)https://dblp.org/img/orcid-mark.12x12.png, Zhiguo Gonghttps://dblp.org/img/orcid-mark.12x12.png: **Neighbor Distribution Learning for Minority Class Augmentation.** [IEEE Trans. Knowl. Data Eng. 36(12)](https://dblp.org/db/journals/tkde/tkde36.html#ZhouG24): 8901-8913 (2024).
5. [Xiaoming Wang](https://dblp.org/pid/60/2139-13.html)https://dblp.org/img/orcid-mark.12x12.png, Zhiguo Gong: **RoDAL: style generation in robot calligraphy with deep adversarial learning.** [Appl. Intell. 54(17-18)](https://dblp.org/db/journals/apin/apin54.html#WangG24): 7913-7923 (2024).
6. [Xiaoming Wang](https://dblp.org/pid/60/2139-13.html)https://dblp.org/img/orcid-mark.12x12.png, [Yilong Yang](https://dblp.org/pid/157/8089.html)https://dblp.org/img/orcid-mark.12x12.png, [Weiru Wang](https://dblp.org/pid/161/7104-1.html)https://dblp.org/img/orcid-mark.12x12.png, [Yuanhua Zhou](https://dblp.org/pid/28/286.html), [Yongfeng Yin](https://dblp.org/pid/40/7742.html), Zhiguo Gong: **Generative adversarial networks based motion learning towards robotic calligraphy synthesis.** [CAAI Trans. Intell. Technol. 9(2)](https://dblp.org/db/journals/caaitrit/caaitrit9.html#WangYWZYG24): 452-466 (2024).
7. [Yuan Fang](https://dblp.org/pid/22/981.html), [Geping Yang](https://dblp.org/pid/319/3574.html), [Xiang Chen](https://dblp.org/pid/64/3062.html), Zhiguo Gong, [Yiyang Yang](https://dblp.org/pid/67/9902.html)https://dblp.org/img/orcid-mark.12x12.png, [Can Chen](https://dblp.org/pid/42/736.html)https://dblp.org/img/orcid-mark.12x12.png, [Zhifeng Hao](https://dblp.org/pid/94/6214.html): **Landmark-based k-factorization multi-view subspace clustering.** [Inf. Sci. 667](https://dblp.org/db/journals/isci/isci667.html#FangYCGYCH24): 120480 (2024).
8. [Luyao Ma](https://dblp.org/pid/223/3156.html)https://dblp.org/img/orcid-mark.12x12.png, [Geping Yang](https://dblp.org/pid/319/3574.html)https://dblp.org/img/orcid-mark.12x12.png, [Yiyang Yang](https://dblp.org/pid/67/9902.html)https://dblp.org/img/orcid-mark.12x12.png, [Xiang Chen](https://dblp.org/pid/64/3062-7.html), [Juan Lu](https://dblp.org/pid/06/1606.html), Zhiguo Gong, [Zhifeng Hao](https://dblp.org/pid/94/6214.html): **UP-DPC: Ultra-scalable parallel density peak clustering.** [Inf. Sci. 660](https://dblp.org/db/journals/isci/isci660.html#MaYYCLGH24): 120114 (2024).
9. [Xinlei Wang](https://dblp.org/pid/18/2920.html), [Jielei Chu](https://dblp.org/pid/169/7190.html)https://dblp.org/img/orcid-mark.12x12.png, [Hua Yu](https://dblp.org/pid/02/2407.html), Zhiguo Gong, [Tianrui Li](https://dblp.org/pid/47/3003.html)https://dblp.org/img/orcid-mark.12x12.png: **Self-supervised Gaussian Restricted Boltzmann Machine via joint contrastive representation and contrastive divergence.** [Knowl. Based Syst. 299](https://dblp.org/db/journals/kbs/kbs299.html#WangCYGL24): 112121 (2024).
10. [Sucheng Deng](https://dblp.org/pid/276/9102.html)https://dblp.org/img/orcid-mark.12x12.png, [Geping Yang](https://dblp.org/pid/319/3574.html), [Yiyang Yang](https://dblp.org/pid/67/9902.html), Zhiguo Gong, [Can Chen](https://dblp.org/pid/42/736.html), [Xiang Chen](https://dblp.org/pid/64/3062-7.html)https://dblp.org/img/orcid-mark.12x12.png, [Zhifeng Hao](https://dblp.org/pid/94/6214.html): **Module-based graph pooling for graph classification.** [Pattern Recognit. 154](https://dblp.org/db/journals/pr/pr154.html#DengYYGCCH24): 110606 (2024).
11. [Mengzhu Wang](https://dblp.org/pid/279/5316.html)https://dblp.org/img/orcid-mark.12x12.png, [Junyang Chen](https://dblp.org/pid/196/7893.html)https://dblp.org/img/orcid-mark.12x12.png, [Ye Wang](https://dblp.org/pid/44/6292.html)https://dblp.org/img/orcid-mark.12x12.png, Zhiguo Gonghttps://dblp.org/img/orcid-mark.12x12.png, [Kaishun Wu](https://dblp.org/pid/34/4445.html)https://dblp.org/img/orcid-mark.12x12.png, [Victor C. M. Leung](https://dblp.org/pid/36/4847.html)https://dblp.org/img/orcid-mark.12x12.png: **TFC: Transformer Fused Convolution for Adversarial Domain Adaptation.** [IEEE Trans. Comput. Soc. Syst. 11(1)](https://dblp.org/db/journals/tcss/tcss11.html#WangCWGWL24): 697-706 (2024).
12. [Huan Wang](https://dblp.org/pid/70/6155-5.html)https://dblp.org/img/orcid-mark.12x12.png, [Ruigang Liu](https://dblp.org/pid/11/9165.html)https://dblp.org/img/orcid-mark.12x12.png, [Chuanqi Shi](https://dblp.org/pid/359/7866.html)https://dblp.org/img/orcid-mark.12x12.png, [Junyang Chen](https://dblp.org/pid/196/7893.html)https://dblp.org/img/orcid-mark.12x12.png, [Lei Fang](https://dblp.org/pid/66/5168-1.html)https://dblp.org/img/orcid-mark.12x12.png, [Shun Liu](https://dblp.org/pid/121/6146.html)https://dblp.org/img/orcid-mark.12x12.png, Zhiguo Gonghttps://dblp.org/img/orcid-mark.12x12.png: **Resisting the Edge-Type Disturbance for Link Prediction in Heterogeneous Networks.** [ACM Trans. Knowl. Discov. Data 18(2)](https://dblp.org/db/journals/tkdd/tkdd18.html#WangLSCFLG24): 45:1-45:24 (2024).
13. [Mengzhu Wang](https://dblp.org/pid/279/5316.html)https://dblp.org/img/orcid-mark.12x12.png, [Junyang Chen](https://dblp.org/pid/196/7893.html)https://dblp.org/img/orcid-mark.12x12.png, [Ye Wang](https://dblp.org/pid/44/6292.html)https://dblp.org/img/orcid-mark.12x12.png, [Shanshan Wang](https://dblp.org/pid/62/3650-8.html)https://dblp.org/img/orcid-mark.12x12.png, [Lin Li](https://dblp.org/pid/73/2252.html)https://dblp.org/img/orcid-mark.12x12.png, [Hao Su](https://dblp.org/pid/09/4945.html)https://dblp.org/img/orcid-mark.12x12.png, Zhiguo Gonghttps://dblp.org/img/orcid-mark.12x12.png, [Kaishun Wu](https://dblp.org/pid/34/4445.html)https://dblp.org/img/orcid-mark.12x12.png, [Zhenghan Chen](https://dblp.org/pid/192/7651.html)https://dblp.org/img/orcid-mark.12x12.png: **Joint Adversarial Domain Adaptation With Structural Graph Alignment.** [IEEE Trans. Netw. Sci. Eng. 11(1)](https://dblp.org/db/journals/tnse/tnse11.html#WangCWWlSGWC24): 604-612 (2024).
14. [Junyang Chen](https://dblp.org/pid/196/7893.html)https://dblp.org/img/orcid-mark.12x12.png, [Ziyi Chen](https://dblp.org/pid/37/1439.html), [Mengzhu Wang](https://dblp.org/pid/279/5316.html), [Ge Fan](https://dblp.org/pid/30/6877.html), [Guo Zhong](https://dblp.org/pid/258/9048.html), [Ou Liu](https://dblp.org/pid/40/230.html), [Wenfeng Du](https://dblp.org/pid/84/4923.html), [Zhenghua Xu](https://dblp.org/pid/80/11498.html), Zhiguo Gong: **A Neural Inference of User Social Interest for Item Recommendation.** [Data Sci. Eng. 8(3)](https://dblp.org/db/journals/dase/dase8.html#ChenCWFZLDXG23): 223-233 (2023).
15. [Jielei Chu](https://dblp.org/pid/169/7190.html)https://dblp.org/img/orcid-mark.12x12.png, [Jing Liu](https://dblp.org/pid/72/2590.html), [Hongjun Wang](https://dblp.org/pid/65/3627-2.html)https://dblp.org/img/orcid-mark.12x12.png, [Hua Meng](https://dblp.org/pid/58/2424.html), Zhiguo Gonghttps://dblp.org/img/orcid-mark.12x12.png, [Tianrui Li](https://dblp.org/pid/47/3003.html)https://dblp.org/img/orcid-mark.12x12.png:  
    **Micro-Supervised Disturbance Learning: A Perspective of Representation Probability Distribution.** [IEEE Trans. Pattern Anal. Mach. Intell. 45(6)](https://dblp.org/db/journals/pami/pami45.html#ChuLWMGL23): 7542-7558 (2023).
16. [Geping Yang](https://dblp.org/pid/319/3574.html)https://dblp.org/img/orcid-mark.12x12.png, [Sucheng Deng](https://dblp.org/pid/276/9102.html)https://dblp.org/img/orcid-mark.12x12.png, [Xiang Chen](https://dblp.org/pid/64/3062-7.html), [Can Chen](https://dblp.org/pid/42/736.html)https://dblp.org/img/orcid-mark.12x12.png, [Yiyang Yang](https://dblp.org/pid/67/9902.html)https://dblp.org/img/orcid-mark.12x12.png, Zhiguo Gong, [Zhifeng Hao](https://dblp.org/pid/94/6214.html): **RESKM: A General Framework to Accelerate Large-Scale Spectral Clustering.** [Pattern Recognit. 137](https://dblp.org/db/journals/pr/pr137.html#YangDCCYGH23): 109275 (2023).
17. [Junyang Chen](https://dblp.org/pid/196/7893.html)https://dblp.org/img/orcid-mark.12x12.png, [Mengzhu Wang](https://dblp.org/pid/279/5316.html)https://dblp.org/img/orcid-mark.12x12.png, [Haodi Zhang](https://dblp.org/pid/165/3321.html)https://dblp.org/img/orcid-mark.12x12.png, [Zhenghua Xu](https://dblp.org/pid/80/11498.html)https://dblp.org/img/orcid-mark.12x12.png, [Xueliang Li](https://dblp.org/pid/l/XueliangLi2.html)https://dblp.org/img/orcid-mark.12x12.png, Zhiguo Gonghttps://dblp.org/img/orcid-mark.12x12.png, [Kaishun Wu](https://dblp.org/pid/34/4445.html)https://dblp.org/img/orcid-mark.12x12.png, [Victor C. M. Leung](https://dblp.org/pid/36/4847.html)https://dblp.org/img/orcid-mark.12x12.png: **IRLM: Inductive Representation Learning Model for Personalized POI Recommendation.** [IEEE Trans. Comput. Soc. Syst. 10(5)](https://dblp.org/db/journals/tcss/tcss10.html#ChenWZXLGWL23): 2827-2836 (2023).
18. [Guangyi Xiao](https://dblp.org/pid/17/3828.html)https://dblp.org/img/orcid-mark.12x12.png, [Shun Peng](https://dblp.org/pid/207/2341.html)https://dblp.org/img/orcid-mark.12x12.png, [Weiwei Xiang](https://dblp.org/pid/32/8079.html), [Hao Chen](https://dblp.org/pid/175/3324-51.html)https://dblp.org/img/orcid-mark.12x12.png, [Jingzhi Guo](https://dblp.org/pid/69/2330.html)https://dblp.org/img/orcid-mark.12x12.png, Zhiguo Gonghttps://dblp.org/img/orcid-mark.12x12.png: **CMFT: Contrastive Memory Feature Transfer for Nonshared-and-Imbalanced Unsupervised Domain Adaption.** [IEEE Trans. Ind. Informatics 19(8)](https://dblp.org/db/journals/tii/tii19.html#XiaoPXCGG23): 9227-9238 (2023).
19. [Zhaoyuan Wang](https://dblp.org/pid/37/9757.html)https://dblp.org/img/orcid-mark.12x12.png, [Zheyi Pan](https://dblp.org/pid/161/9664.html)https://dblp.org/img/orcid-mark.12x12.png, [Shun Chen](https://dblp.org/pid/118/4720.html), [Shenggong Ji](https://dblp.org/pid/140/7246.html)https://dblp.org/img/orcid-mark.12x12.png, [Xiuwen Yi](https://dblp.org/pid/166/5244.html)https://dblp.org/img/orcid-mark.12x12.png, [Junbo Zhang](https://dblp.org/pid/75/8471.html)https://dblp.org/img/orcid-mark.12x12.png, [Jingyuan Wang](https://dblp.org/pid/75/5135.html)https://dblp.org/img/orcid-mark.12x12.png, Zhiguo Gonghttps://dblp.org/img/orcid-mark.12x12.png, [Tianrui Li](https://dblp.org/pid/47/3003.html)https://dblp.org/img/orcid-mark.12x12.png, [Yu Zheng](https://dblp.org/pid/87/1585-4.html)https://dblp.org/img/orcid-mark.12x12.png:  
    **Shortening Passengers' Travel Time: A Dynamic Metro Train Scheduling Approach Using Deep Reinforcement Learning.** [IEEE Trans. Knowl. Data Eng. 35(5)](https://dblp.org/db/journals/tkde/tkde35.html#WangPCJYZWGLZ23): 5282-5295 (2023).
20. [Geping Yang](https://dblp.org/pid/319/3574.html)https://dblp.org/img/orcid-mark.12x12.png, [Sucheng Deng](https://dblp.org/pid/276/9102.html)https://dblp.org/img/orcid-mark.12x12.png, [Can Chen](https://dblp.org/pid/42/736.html)https://dblp.org/img/orcid-mark.12x12.png, [Yiyang Yang](https://dblp.org/pid/67/9902.html)https://dblp.org/img/orcid-mark.12x12.png, Zhiguo Gonghttps://dblp.org/img/orcid-mark.12x12.png, [Xiang Chen](https://dblp.org/pid/64/3062-7.html)https://dblp.org/img/orcid-mark.12x12.png, [Zhifeng Hao](https://dblp.org/pid/94/6214.html): **LiteWSEC: A Lightweight Framework for Web-Scale Spectral Ensemble Clustering.** [IEEE Trans. Knowl. Data Eng. 35(10)](https://dblp.org/db/journals/tkde/tkde35.html#YangDCYGCH23): 10035-10047 (2023).
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Services

Professional Services (Since 2002 - present)

* Associate Editor. WWW Journal. Springer.
* Associate Editor. Distributed and Parallel Databases. Springer.
* Associated Editor. International Journal of Wavelets, Multiresolution and Information Processing, World Scientific Publisher.
* PC Co-Chair: ICBK2021.
* PC Co-Chair: PAKDD2019.
* Local Chair: IJCAI2019, IJCAI2023.
* Local Chair: ICDE2019.
* General Co-Chairs: Apweb-Waim2018.
* Co-Guest-Editor, WWW Journal: Internet and Web Information Systems, Special Issue on Web-based Services and Information Systems, 2011.
* General Chair, Waim2014, Apweb-Waim2018, IEEE/WIC/ACM Wi-IAT2012, ICEBE2009.
* Member of Management Committee: KDD China
* PhD Consortium Chair: DASFAA2018
* PC Member: ICML2021-2022, NIPS2022, AAAI2020-2021, IJCAI2020-2023, CIKM2016, VLDB2019, DASFAA2019,2020, Waim, Apweb
* Workshop Co-Chairs, ICWL2015
* Workshop Co-Chairs, Wise2016

University Services (Since 2002 - present)

* Department Head of CIS (2007 to 2014, 2019-2024)
* FST Representative of Research Committee
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