Prof. Zhixin YANG
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Academic Qualification

- Ph.D. in Industrial Engineering and Engineering Management, Hong Kong University of Science and Technology, Hong Kong SAR, China
- Direct PhD Program in Intelligent CAD, Huazhong University of Science and Technology, China
- B.Eng. in Mechanical Engineering, Huazhong University of Science and Technology, China

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Working Experience

- ***Deputy Director***, Zhuhai UM Science and Technology Institute, University of Macau, 12/2023-Present
- ***Assistant Professor / Associate Professor***, Department of Electromechanical Engineering, Faculty of Science and Technology, University of Macau, 02/2003-Present.
- ***Director***, Research Services and Knowledge Transfer Office, University of Macau, 06/2018 – 06/2022.
- ***Assistant Dean***, Faculty of Science and Technology, University of Macau, 05/2016 – 05/2018.
- ***Post-Doctorate Fellow / Senior Research Engineer***, Data Storage Institute, A*STAR, Singapore, 06/2000-01/2003

Honors and Awards

- **First Prize Award (Supervisor), 17th National Challenge Cup**, UM Team (Weixiang Liang, Shiyun Liang, Ziqin Ding, Zhixin Yang (Supervisor)). 03/2022.

- **The National Scientific Innovation and Pioneer Award** . As a State-level honour in China for science and technology, this award is for recognizing Chinese citizens who have made remarkable contributions to scientific research, key equipment development, and science popularizations. 2017.
- **First Prize Award & Outstanding Instructor Award**, Chang-Feng National Big Data Mining Contest, organized by the Chinese Institute of Electronics. 10/2021.
- **Winner of CVPR2020 UG2+ Challenge** (Supervisor). Won first place in the IEEE-CVPR2020 UG2+ competition in the Challenge: "(Semi-)Supervised Object Detection in Low Light Condition", essential technology for intelligent safety monitoring. Joint team formed by UM and Chinese Academy of Science. 06/2020.
- **Second place in CVPR2019 UG2+ competition** (Supervisor), a well-known global intelligent vision challenge, Joint team formed by UM and Chinese Academy of Science. 06/2019.
- **First Prize Award** (Supervisor), **16th National Challenge Cup** , (*The only 1st prize in Macao*). 11/2019.
- First Prize in Southern-China competition, and Nominee prize in global finals (Teacher), S.-T. Yau High School Science Award (Mathematics), 12/2017.
- Research Excellence Award of Faculty of Science and Technology, University of Macau, 08/2017.
- First prize award (Supervisor), The Fourth Central South China, Hong Kong and Macau Undergraduate's Creative Design and Manufacturing Competition, 2009.
- Third prize award (Supervisor), 11th National Challenge Cup – National College Science and Technology Competition, 2009.
- Macau expert and coach of Macau team, 38th World Professional Skill Competition, Finland, Manufacturing Trade, 2008.
- Champion (Macau expert and coach of Macau team), The 2nd Guangzhou/Hong Kong/Macau Youth Skills Competition – Manufacturing Trade, 2004.

Research

Research Interests

Prof. Yang's work focuses on prognostic health monitoring and robotics technologies for intelligent safety monitoring in smart cities. Fundamental research studies data-driven condition monitoring of electromechanical equipment in the Internet of Things environment with a focus on multimodal signals processing, intelligent diagnosis, and resilience dynamic monitoring.

Critical research on robotics includes machine vision-based perception, 3D shape recognition, and agile robot control for safety monitoring applications.

Research areas include:

- Intelligent Fault Diagnosis and Prognostic Health Management of engineering system
- Safe Service Guarantee of distributed heterogeneous urban equipment
- Machine Vision based robot perception and control for safety monitoring

Recent Research Projects

- 國家自然科學基金与澳门科学技术发展基金联合科研资助项目, 0092/2024/AFJ, 20/09/2024 - 19/09/2027, Regulation of Cross-scale High-dynamic Ultra-precision Motion for Electron Beam Inspection of Wafer Defect 面向晶圓缺陷電子束檢測的跨尺度高動態超精密運動調控方法, PI, MOP2,071,500
- 科技部與澳門科學技術發展基金聯合科研資助項目, 0075/2023/AMJ, Research and Application for Intelligent Detection of Packaging Quality about Semiconductor Devices, 半導體器件封裝品質智慧檢測關鍵技術研究與應用示範, PI, 1/12/2023 - 30/11/2025, MOP1,540,000
- 澳門科技發展基金資助項目 FDCT, 0003/2023/RIB1, Development of a Safety Guaranteed Surgical Navigation System Based on Globally Optimal Registration Algorithm， 基於全局最優化空間配准算法的手術導航定位系統開發，PI， 1/12/2023 - 30/11/2026，MOP2,059,000
- 廣東省科技廳資助項目，(2023A0505030003)， Research and application of 3D robotics vision based intelligent self-positioning manufacturing and compliance control， 基於機器人 3D 視覺的智能加工自尋位及柔順控制技術研究與應用，PI (UM)， 01/01/2023 - 31/12/2025 RMB1,000,000.
- 澳門科技發展基金資助項目 FDCT Key Project, Research and application of multi-modal sensing and data-driven intelligent process planning technology for industrial robot, PI, 01/2020-01/2023. MOP6,000,000.
- 廣東省科技廳資助項目, Intelligent Diagnostic and Evaluation Technology for Service Performance of High Voltage Cable of EMU in Urban Rail Transit, PI, 01/2020-01/2022.
- 澳門科技發展基金資助項目 FDCT Project, Health Mo*nitoring and Prediction of Electromechanical Equipment Towards Internet of Intelligent Things*, PI, 03/2018- 03/2021.
- Research committee of UM (MYRG-GRG2024-00299-FST), Key Technologies for Intelligent Fault Diagnosis of Offshore Wind Turbines under Fluctuating Operating Conditions Principal investigator, 1/01/2025-31/12/2026, MOP520,000
- Research committee of UM (MYRG-GRG2023-00237-FST-UMDF), Research on Depth Vision Perception of Occluded Objects for Industrial

Robot Manipulating Principal investigator, 01/01/2024- 31/12/2025, MOP240,000.

Selected Recent Publications

1. Liu, YJ., Liu, S., Chen, B., **Yang, Z.X***, Xu, S. Fusion-Perception-to-Action Transformer: Enhancing Robotic Manipulation with 3D Visual Fusion Attention and Proprioception. IEEE Transactions on Robotics, In Press
2. Liang, W., Liu, Y., Wang, J., **Yang, Z.X***. Trajectory Progress-based Prioritizing and Intrinsic Reward Mechanism for Robust Training of Robotic Manipulations. IEEE Transactions on Automation Science and Engineering, In Press.
3. Wang, J., Luo, L., Liang, W., **Yang, Z.X.*** (2024-05). OA-Pose: Occlusion-aware monocular 6-DoF object pose estimation under geometry alignment for robot manipulation, ***Pattern Recognition***, Volume 154, 2024, 110576.
4. Xu, S.Q., Li, F., Song, Z., Fang, J., Wang, S.F., **Yang, Z.X.*** (2024-04). Multi-Sem Fusion: Multimodal Semantic Fusion for 3D Object Detection. ***IEEE Transactions on Geoscience and Remote Sensing***. (SCI, IF: 8.2, Q1, 27/275 in Engineering, Electrical and Electronic, 4/34 in Remote Sensing). (in press).
5. Wang, J., Liang, W., Yang, J., Wang, S., **Yang, Z.X.*** (2023-05). An adaptive image enhancement approach for safety monitoring robot under insufficient illumination condition, ***Computers in Industry***, Vol 147, 2023, 103862. doi:10.1016/j.compind.2023.103862.
6. Wang, D. and **Yang, Z.X*** (2023). Self-Supervised Point Cloud Understanding via Mask Transformer and Contrastive Learning. ***IEEE Robotics and Automation Letters***, vol. 8, no. 1, pp. 184-191, Jan. 2023. (SCI).
7. Li, J., Chen, H. Wang, X., **Yang, Z.X**.*. (2024-10). A comprehensive gear eccentricity dataset with multiple fault severity levels: Description, characteristics analysis, and fault diagnosis applications. ***Mechanical Systems and Signal Processing***. In press.
8. Wang, X., Chen, H., Zhao, J. Song, C., Zhang, Y., **Yang, Z.X**.*, Wong, P.K. (2024-07). Wind Turbine Fault Diagnosis for Class-Imbalance and Small-Size Data Based on Stacked Capsule Autoencoder. ***IEEE Transactions on Industrial Informatics***, PP. 1-11. doi: 10.1109/TII.2024.3424211 (early access) (SCI, IF:11.7, Q1, 2/84 in Automation and Control Systems; 3/169 in Computer Science, Interdisciplinary Applications; 2/69 in Engineering, Industrial)
9. Chen, H. Wang, X., Li, J., **Yang, Z.X**.*. (2024-06). Dynamic Focusing Network for Semisupervised Mechanical Fault Diagnosis of Rotating Machinery***. IEEE Transactions on Industrial Informatics***. PP. 1-12. DOI: 10.1109/TII.2024.3409443 (early access) (SCI, IF:11.7, Q1, 2/84 in Automation and Control Systems; 3/169 in Computer Science, Interdisciplinary Applications; 2/69 in Engineering, Industrial)
10. Tu, Z., Luo, Z., Li, M., Wang, J., **Yang, Z. X**., & Wang, X. (2024). Adaptive spectrum amplitude modulation method for rolling bearing fault frequency determination. Measurement Science and Technology, 35(11), 116108.
11. Chen, H. Wang, X., **Yang, Z.X**.*, Li, J. (2024-05). Privacy-preserving intelligent fault diagnostics for wind turbine clusters using federated stacked capsule autoencoder. ***Expert Systems with Applications***, Volume 254, 2024, pp.1-12. 124256.
12. Chen,Y., Chen, S., **Yang, Z.X.*,** Wu, E. (2024-05). Learning self-target

knowledge for few-shot segmentation, ***Pattern Recognition***, Volume 149, 2024, 110266.

13. Chen,Y., Jiang, R., Zheng, Y., Sheng, B., **Yang, Z.X.**, Wu, E. (2024). Dual Branch Multi-Level Semantic Learning for Few-Shot Segmentation, ***IEEE Transactions on Image Processing***, vol. 33, pp. 1432-1447, 2024, doi: 10.1109/TIP.2024.3364056.
14. Xi, R-D, Ma, T-N, Xiao, X, **Yang, Z-X.*** (2024-04). Design and implementation of an adaptive neural network observer–based backstepping sliding mode controller for robot manipulators. *Transactions of the Institute of Measurement and Control*. 2024, Vol. 46(6) 1093-1104. doi:10.1177/01423312231190169. (SCI, IF: 1.8, Q3, 49/65 in Automation & Control Systems).
15. Lyu, L., Cao, W., Ren, X. Wu, E., Yang, Z.* (2024-02). Efficient odd–even multigrid for pointwise incompressible fluid simulation on GPU. Visual Computer (2024), pp1-17. https://doi.org/10.1007/s00371-024-03264-y (SCI, IF 3.5, Q2, 34/112 in Computer Science, Software Engineering)
16. Lyu, L., Ren, X., Cao, W., Zhu, J., Wu, E., & **Yang, Z. X**. (2024). Wavelet Potentials: An Efficient Potential Recovery Technique for Pointwise Incompressible Fluids. In ***Computer Graphics Forum*** (p. e15023).
17. Wong, P. K., Li, W., Ma, X., **Yang, Z.**, Wang, X., & Zhao, J. (2024). Adaptive event-triggered dynamic output feedback control for nonlinear active suspension systems based on interval type-2 fuzzy method. ***Mechanical Systems and Signal Processing***, 212, 111280.
18. Chen, H., Wang, X. -B. and **Yang, Z.X.*** (2023-12). A Novel Rotating Machinery Fault Diagnosis System Using Ensemble learning Capsule Autoencoder, IEEE Sensors Journal, PP(99):1-1 doi: 10.1109/JSEN.2023.3331837.
19. Chen, Y., Zhang, D., Zheng, Y., Yang, Z.X., Wu, E., Zhao, H. (2023-10). Boosting Video Object Segmentation via Robust and Efficient Memory Network. IEEE Transactions on Circuits and Systems for Video Technology. (DOI: 10.1109/TCSVT.2023.3321977) (in press).
20. Chen, H., Wang, X.B., **Yang, Z.X.***. (2023-09). Semi-Supervised Self-Correcting Graph Neural Network for Intelligent Fault Diagnosis of Rotating Machinery. ***IEEE Transactions on Instrumentation & Measurement***. vol. 72, pp. 1-11, 2023, Art no. 3536611. (SCI, IF: 5.6, Q1, 56/275 in Engineering, Electrical and Electronic, 9/63 in Instruments and Instrumentation)
21. **Yang, Z.X.**, Li, C.S., Wang, X.B., Chen, H. (2023). Intelligent fault monitoring and diagnosis of tunnel fans using a hierarchical cascade forest. ***ISA Transactions***, doi:10.1016/j.isatra.2022.10.037. (SCI)
22. Zhao, J., Zhu, Y., Wong, PK, Li, WF, **Yang, Z.X**., Li PS., Song CH. (2023). Non-fragile robust output feedback control of uncertain active suspension systems with stochastic network-induced delay. *Nonlinear Dynamics*. (SCI).
23. Chen, H., Wang, X.B and **Yang, Z. X***. (2022). Fast Robust Capsule Network With Dynamic Pruning and Multiscale Mutual Information Maximization for Compound-Fault Diagnosis. ***IEEE/ASME Transactions on Mechatronics***, 2022, doi: 10.1109/TMECH.2022.3214865. (SCI)
24. Wang, D., Tang, L., Wang, X., Luo, L., and **Yang, Z.X.*** (2022). Improving deep learning on point cloud by maximizing mutual information across layers, ***Pattern Recognition***, 131(2022) 108892. (SCIE).
25. Wang, D., Tang, L., Zhu, L., **Yang, Z.X.*** (2022). Mutual Information Maximization based Similarity Operation for 3D Point Cloud Completion Network. ***IEEE Signal Processing Letters***, vol. 29, pp 1217-1221. (SCIE)

26. Xi, R., Xiao, X., Ma, T., **Yang, Z.X.*** (2022). Adaptive Sliding Mode Disturbance Observer based Robust Control for Robot Manipulators Towards Assembly Assistance. ***IEEE Robotics and Automation Letters***, vol. 7, no. 3, pp. 6139-6146, July 2022. (SCIE)
27. Liu X, **Yang Z-X***, Xu Z and Yan X (2022). NeuroVI-based new datasets and space attention network for the recognition and falling detection of delivery packages. *Frontier in Neurorobotics*. 16:934260. doi: 10.3389/fnbot.2022.934260 (SCIE)
28. Liu, X., **Yang, Z.***, Hou, J., and Huang, W. (2022). Dynamic Scene's Laser Localization by NeuroIV-based Moving Objects Detection and LIDAR Points Evaluation. ***IEEE Transactions on Geoscience and Remote Sensing***, vol. 60, pp. 1-14, 2022, Art no. 5230414. (SCIE)
29. Ma, C.G., Li, J.M., Zhang, N., Bu, F., **Yang, Z.X.** (2022). Open-Circuit Radial Stray Magnetic Flux Density Based Noninvasive Diagnosis for Mixed Eccentricity Parameters of Interior Permanent Magnet Synchronous Motors in Electric Vehicles. ***IEEE Transactions on Industrial Electronics***. 70, no. 2, pp. 1983-1992, Feb. 2023, doi: 10.1109/TIE.2022.3165250. 2022. (SCIE)
30. Cao, W., Lyu, L., **Yang, Z.X.***, Wu, E. (2022). An Energy Constraint Position Based Dynamics with Corrected SPH Kernel. ***Science China Information Sciences***, 66, 112108 (2023). (SCI).
31. Yang, Z. X., Rong, H. J., Angelov, P. P., and **Yang, Z.X***. (2022). Statistically Evolving Fuzzy Inference System for Non-Gaussian Noises. ***IEEE Transactions on Fuzzy Systems***, vol. 30, no. 7, pp. 2649-2664, July 2022, doi: 10.1109/TFUZZ.2021.3090898. (SCIE)
32. Yu, G., Wong, P. K., Huang, W., Zhao, J., Wang, X. -B., and **Yang, Z. -X.** (2022). Distributed Adaptive Consensus Protocol for Connected Vehicle Platoon With Heterogeneous Time-Varying Delays and Switching Topologies. ***IEEE Transactions on Intelligent Transportation Systems***, vol. 23, no. 10, pp. 17620-17631. (SCIE).
33. Hang, W., Wong, P.K., Zhao, J., Yang, Z.X, **Yang, Z.X.** (2022-07). Observer-based robust gain-scheduled control for semi-active air suspension systems subject to uncertainties and external disturbance. ***Mechanical Systems and Signal Processing***, Vol 173, 2022, 109045. (SCIE)
34. Liang, S., Xi, R., Xiao, X., **Yang, Z.X***. (2022). Adaptive Sliding Mode Disturbance Observer and Deep Reinforcement Learning Based Motion Control for Micropositioners. *Micromachines* 13(3):458. (SCIE).
35. Yang, Z.-X., Rong, H.-J., Wong, P.K., Angelov, P., Vong, C.M., Chiu C. W., and **Yang, Z.-X**. (2022). A Novel Multiple Feature-Based Engine Knock Detection System using Sparse Bayesian Extreme Learning Machine. ***Cognitive Computation***, 2022, 1-24. (SCIE).
36. Chen, Y.D., Hao, C.Y., **Yang, Z.X.*** Wu, E. (2022). Fast Target-aware Learning for Few-shot Video Object Segmentation. ***Science China Information Sciences***, 65, 182104 (2022). (SCIE)
37. Liang, Z., Wang, Z., Zhao, J., Wong, P.K., **Yang, Z.,** and Ding, Z. (2022). Fixed-Time and Fault-Tolerant Path-Following Control for Autonomous Vehicles With Unknown Parameters Subject to Prescribed Performance***. IEEE Transactions on Systems, Man, and Cybernetics: Systems*** (SCIE)
38. Zhao, Y.H., Zhang, Z.Q., Li, Z.H., **Yang, Z.X.,** Dehghani-Sanij AA, Xie, S.Q. (2020-12). An EMG-Driven Musculoskeletal Model for Estimating Continuous Wrist Motion. ***IEEE Trans Neural Syst Rehabil Eng***. 2020 Dec; 28(12):3113-3120. doi: 10.1109/TNSRE.2020.3038051.

39. Luo L., Tang, L.L., Lui, R., Zhang, X., and **Yang, Z.X.***. (2021). Multi-modality Learning for Non-rigid 3D Shape Retrieval via Structured Sparsity Regularizations. ***IEEE Sensors Journal***, 21(20): 22985-22994, 2021. (SCIE)
40. **Yang, Z.X.,** Yu, G., Zhao, J., Wong, P. K., & Wang, X. (2021). Online Equivalent Degradation Indicator Calculation for Remaining Charging-discharging Cycle Determination of Lithium-ion Batteries. ***IEEE Transactions on Vehicular Technology***, 70(7): 6613 – 6625, July (SCIE).
41. Wang, X. B., Luo, L. Q., Tang, L.L., **Yang, Z.X**.*. (2021). Automatic Representation and Detection of Fault Bearings in In-wheel Motor under Variable Load Conditions. ***Advanced Engineering Informatics****.* 49(101321):1-10. *doi: 10.1016/j.aei.2021.101321* (SCIE).
42. Feng, Z., Ming, M. Ling, J., Xiao, X., **Yang, Z.X**., Wan, F. (2021). Fractional delay filter based repetitive control for precision tracking: Design and application to a piezoelectric nanopositioning stage. ***Mechanical Systems and Signal Processing***, 164(108249): 1915-1930, *:/10.1016/j.ymssp.2021.108249.* (SCIE).
43. Yang, Z. X., Rong, H.J., Wong, P. K., Angelov, P., **Yang, Z.X**. and Wang, H. (2021). Self-Evolving Data Cloud-based PID-like Controller for Nonlinear Uncertain Systems, ***IEEE Transactions on Industrial Electronics***. Vol 68, Issue 5, pp. 4508-4518. doi: 10.1109/TIE.2020.2982094. (SCI).
44. Ng, K. K. H., Chen, C. H., Lee, C. K. M., Jiao, J., & **Yang, Z.X**. (2021). A systematic literature review on intelligent automation: Aligning concepts from theory, practice, and future perspectives. ***Advanced Engineering Informatics****, 47*, 101246. doi: https://doi.org/10.1016/j.aei.2021.101246. (SCIE).
45. Wang, D.Y., Zhou, L.J., **Yang, Z.-X.*,** Cui, Y. Wang, L., Jiang, J., Guo, L., (2020). A New Testing Method for the Dielectric Response of Oil-immersed Transformer, ***IEEE Transactions on Industrial Electronics***, Vol. 67, no.12, pp. 10833-10843. 2020. (SCI)
46. Zhang, P.-B., **Yang, Z.X.*** (2020). A new learning paradigm for random vector functional-link network: RVFL+, ***Neural Networks***, Vol. 122, (2020), Pp 94-105. ISSN 0893-6080, Feb. 2020. Doi: 10.1016/j.neunet.2019.09.039. (SCI)
47. Tang, L.L**.**, Chen, K., Wu, C., Hong, Y., Jia, K., **Yang, Z.X.*** (2020). Improving Semantic Analysis on Point Clouds via Auxiliary Supervision of Local Geometric Priors. ***IEEE Transactions on Cybernetics***, 52(6): 4949-4959. *doi: 10.1109/TCYB.2020.3025798* (SCIE)
48. Tang, L.L, **Yang, Z.X.***, Jia, K. (2019). Canonical Correlation Analysis Regularization: An Effective Deep Multi-View Learning Baseline for RGB-D Object Recognition. **IEEE Transactions on Cognitive and Developmental Systems,** 11. No. 1, pp 107-118. Mar. 2019. (SCIE)
49. Liang, P., Deng, C., Wu, J., **Yang, Z.X.**, Zhu, J., Zhang, Z. (2019). Compound Fault Diagnosis of Gearboxes via Multi-label Convolutional Neural Network and Wavelet Transform, ***Computers in Industry***, Vol 113, 2019, 103132, DOI:/10.1016/j.compind.2019.103132. (SCI)
50. Bao, R.J., Rong H.J., **Yang, Z.X**., Chen, B.D. (2019). A Novel Prognostic Approach for RUL Estimation with Evolving Joint Prediction of Continuous and Discrete States. ***IEEE Transactions on Industrial Informatics***. vol. 15, no. 9, pp. 5089-5098, Sep. 2019. (SCI).
51. **Yang, Z.X.**, Wang, X.B., Wong, P.K. (2018). Single and Simultaneous Fault Diagnosis with Application to a Multistage Gearbox: A Versatile Dual-ELM Network Approach. ***IEEE Transactions on Industrial Informatics,*** 14, No. 12, pp. 5245-5255, 2018. (SCI)

52. Zhong, J.H., Wong, P.K., **Yang, Z.X**. (2018). Fault diagnosis of rotating machinery based on multiple probabilistic classifiers, ***Mechanical Systems and Signal Processing***, Vol. 108, 2018, pp 99-114. (SCI)
53. Wang, X.B., **Yang, Z.X.***, Yan, X.A. (2018). Novel Particle Swarm Optimization-Based Variational Mode Decomposition Method for the Fault Diagnosis of Complex Rotating Machinery. ***IEEE/ASME Transactions on Mechatronics***, Vol. 23, no. 1, pp.68-79, 2018. (SCI) (**Highly cited papers***)
54. Zhang, P.B. and **Yang, Z.-X.*** (2018). A Novel AdaBoost Framework with Robust Threshold and Structural Optimization. ***IEEE Transactions on Cybernetics***, 01/2018, Vol.48, Issue 1, pp.64-76. (SCI)
55. **Yang, Z.X.**, Tang, L.L. Zhang, K. Wong, P.K. (2018). Multi-view CNN Feature Aggregation with ELM Auto-Encoder for 3D Shape Recognition. ***Cognitive Computation***, Vol. 10, Issue 6, pp 908–921. (SCIE)
56. Wang, X.B., **Yang, Z.X.***, Wong, P.K., Deng, C. (2018-12). Novel paralleled extreme learning machine networks for fault diagnosis of wind turbine drivetrain. ***Memetic Computing***. 11, 127-142 (2019). DOI: 10.1007/s12293-018-0277-2 (SCIE)
57. **Yang, Z.X.*,** Wang, X.B., Zhong, J.H. Representational Learning for Fault Diagnosis of Wind Turbine Equipment: A Multi-Layered Extreme Learning Machines Approach. *Energies* 2016, *9(6)*, 379. (SCIE)
58. Wong, P.K., Zhong, J., **Yang, Z.X**., and Vong, C.M. Sparse Bayesian Extreme Learning Committee Machine for Engine Simultaneous Fault Diagnosis. ***Neurocomputing,*** 174(2016): 331-343. (SCIE)
59. Fu, H., Vong, C.M., Wong, P.K. and **Yang, Z.X.**, Fast detection of impact location using kernel extreme learning machine, ***Neural Computing and Applications***, 27(1), pp. 121-130 (2016). (SCI)
60. **Yang, Z.X.***, Zhang, P. and Chen, L. RFID-Enabled Indoor Positioning Method for a Real-Time Manufacturing Execution System Using OS-ELM. ***Neurocomputing***, 174(2016): 121-133. (SCIE)

Services

1) Professional Editorship and Service

- Journal Editorship
  1）Associate Editor, International Journal of Wavelets, Multiresolution and Information Processing (SCIE), 01/11/2021-present.
  2）Editorial Advisory Board Member, Journal of Engineering Design (SCIE), 09/2022-present.

- Guest Journal Editorship
  1） Guest Editor, Advanced Engineering Informatics Journal, SI: Emerging artificial intelligence and optimization methods for robust and adaptive decision making; 06/2020-05/2021.

2） Guest Editor, Journal of the Franklin Institute; SI: Intelligent Monitoring, Diagnosis, Prognosis and Control in Engineering, 2021-2022.

3） Guest Editor, Journal of Electrical and Computer Engineering; SI: Machine Intelligence in Signal Sensing, Processing, and Recognition, 12/2016-08/2017.

4） Editor, Macau Association for Promotion Science and Technology, published three conference proceedings, 2010-2019

2) Academic Activities

1. Organizing Chair, 2019 IEEE International Conference on Industrial Engineering & Engineering Management (**IEEE IEEM2019**), Macau, 15-18 Dec 2019.
2. Keynote Speaker & Session Moderator, Sub-forum of China Science and Technology Summit 2021. Macau, 03/12/2021.
3. Keynote Speaker, Macau, 14/12/2021
4. Keynote Speaker, “Multiscale Urban Electromechanical Infrastructure Safety Monitoring Towards IoTs”, 5th International Conference of Maintenance Engineering (IncoME-V 2020), 2020 Annual Conference of the Centre for Efficiency and Performance Engineering Network (CEPE Net 2020), IncoME-CEPE2020, 10/2020.
5. Keynote Speaker, Urban Public Safety Monitoring Promoted by Internet of Things Technology, Smart City Session of the Annual National Conference of China Association of Science and Technology. Qingdao, Shangdong, 10/2019.
6. Keynote Speaker, Internet of Things Technology Leveraging Urban Public Safety, IEEE Macau Forum on Smart City and Safety, IEEE-Macau. Macau 05/2019.
7. Session Moderator, Sub-forum of Smart City, China Science and Technology Summit 2019. Macau, 07/2019.