Professor (Research) Mengchu Zhou

Fellow of IEEE, IFAC, AAAS, CAA and NAI
Department of Engineering Science, Faculty of Innovation Engineering
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Academic Qualification:

- Ph. D. in Computer & Systems Eng., Rensselaer Polytechnic Institute, Troy, NY, 1990
- M. S. in Automatic Control, Beijing Institute of Technology, Beijing, China, 1986
- B. S. in Control Engineering, Nanjing Univ. of Sci. & Tech., Nanjing, China, 1983

Teaching Area

- Intelligent Optimization
- Discrete even dynamic systems
- Sustainable Manufacturing Systems

Research Area

- Intelligent automation
- Petri nets
- Robotics
- Internet of Things
- Big data analytics
- Cloud/edge computing
- Semiconductor manufacturing
- Artificial intelligence
- Intelligent transportation

Working Experience

- **September 2016 – present**: Macau University of Science and Technology, Professor at the Department ofEngineering Science and Macao Institute of Systems Engineering
- **July 1990 – present**: New Jersey Institute of Technology, ECE (Assistant Professor, Associate Professor,Professor and Distinguished Professor).

Research Grants

Learning-based Intelligent Optimization Methods for Smart Warehousing in Logistics Industry, FDCT Modeling and Analysis of the Life Cycle of Disasters and Contingent Events via Big Data, FDCT Internet-oriented On-line Data Privacy Protection, PRC Ministry of Science and Technology

Representative publications (Complete publication refer to my webpage)

Recent Books

[1] E.-S. M. El-Alfy, G. Bebis and M. Zhou, *Intelligent Image and Video Analytics*, CRC Press, New York, USA, 2023

[2] L. Li and M. Zhou, *Sustainable Manufacturing Systems: An Energy Perspective*, IEEE Press/Wiley, Hoboken, NJ,2022.

[3] B. Huang and M. Zhou, *Supervisory Control and Scheduling of Resource Allocation Systems: Reachability GraphPerspective*, IEEE Press/Wiley, Hoboken, NJ, 2020.

Recent Journal Papers2023

[1] P. Zhang, C. Li, M. Zhou, W. Huang, A. Abusorrah and O. Bamasak, "Transaction transmission model for blockchain channels based on non-cooperative games," *Sci. China Inf. Sci*., Vol. 66, 112105, 2023. https://doi.org/10.1007/s11432- 021-3362-9.

[2] K. Wang, J. An, M. Zhou, Z. Shi, X. Shi and Q. Kang, "Minority-Weighted Graph Neural Network for Imbalanced Node Classification in Social Networks of Internet of People," *IEEE Internet of Things Journal*, vol. 10, no. 1, pp. 330-340, 1 Jan.1, 2023.

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[3] J. J. Cheng, M. Ju, M. Zhou, C. Liu, S. Gao, A. Abusorrah, and C. Jiang, "A Dynamic Evolution Method for Autonomous Vehicle Groups in a Highway Scene," *IEEE Internet of Things Journal*, vol. 9, no. 2, pp. 1445-1457, Jan. 2022.

[4] B. Huang, M. Zhou, A. Abusorrah and K. Sedraoui, "Scheduling Robotic Cellular Manufacturing Systems with Timed Petri Net, A* Search, and Admissible Heuristic Function," *IEEE Trans. on Automation Science and Engineering*, 19(1),pp. 243-250, Jan. 2022.

[5] Z. Zhao, M. Zhou and S. Liu, "Iterated Greedy Algorithms for Flow-Shop Scheduling Problems: A Tutorial," *IEEE Trans. on Automation Science and Engineering*, 19(1), pp. 251-261, Jan. 2022.

[6] Z. Huang, S. Yang, M. Zhou, Z. Li, Z. Gong and Y. Chen, "Feature Map Distillation of Thin Nets for Low-Resolution Object Recognition," *IEEE Transactions on Image Processing*, vol. 31, pp. 1364-1379, 2022.

[7] B. Hu, Z. Cao and M. Zhou, "Scheduling Real-Time Parallel Applications in Cloud to Minimize Energy Consumption,"
IEEE Trans. on Cloud Computing, vol. 10, no. 1, pp. 662-674, 1 Jan.-March 2022.

[8] X. Wang, H. Hu and M. Zhou, "Discrete Event Approach to Robust Control in Automated Manufacturing Systems,"
IEEE Trans. on Systems, Man, and Cybernetics: Systems, vol. 52, no. 1, pp. 123-135, Jan. 2022.

[9] X. Shi, Q. Kang, J. An and M. Zhou, "Novel L1 Regularized Extreme Learning Machine for Soft-Sensing of an Industrial Process," *IEEE Trans. on Industrial Informatics*, vol. 18, no. 2, pp. 1009-1017, Feb. 2022.

[10] S. Han, K. Zhu and M. Zhou, "Competition-Driven Dandelion Algorithms with Historical Information Feedback," *IEEE Trans. on Systems, Man, and Cybernetics: Systems*, vol. 52, no. 2, pp. 966-979, Feb. 2022.

[11] P. Y. Zhang, Y. Chen, M. Zhou, G. Xu; W. Huang, Y. Al-Turki and A. Abusorrah, "A Fault-tolerant Model for Performance Optimization of a Fog Computing System," *IEEE Internet of Things Journal*, vol. 9, no. 3, pp. 1725-1736,Feb. 2022.

[12] Y. Fu, M. Zhou, X. Guo, L. Qi and K. Sedraoui, "Multiverse Optimization Algorithm for Stochastic Biobjective Disassembly Sequence Planning Subject to Operation Failures," *IEEE Trans. on Systems, Man, and Cybernetics: Systems*, vol. 52, no. 2, pp. 1041-1051, Feb. 2022.

[13] Z. Tan, J. Chen, Q. Kang, M. Zhou, A. Abusorrah and K. Sedraoui, "Dynamic Embedding Projection-Gated Convolutional Neural Networks for Text Classification," *IEEE Transactions on Neural Networks and Learning Systems*,vol. 33, no. 3, pp. 973-982, March 2022.

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Scheduling," *IEEE Trans. on Automation Science and Engineering*, vol. 19, no. 2, pp. 1137-1150, April 2022.

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Professional Certification and Awards

2022 Best Semiconductor Manufacturing Automation Paper in Application, Y. Qiao, M. Zhou, N. Wu, Z. Li and Q. Zhu, "Closing-Down Optimization for Single-Arm Cluster Tools Subject to Wafer Residency Time Constraints," *IEEE Transactions on Systems, Man, and Cybernetics: Systems*, vol. 51, no. 11, pp. 6792-6807, Nov. 2021, Technical Committee on Semiconductor Manufacturing Automation, IEEE Robotics & Automation Society.

2022 Top #89 in the world ranking and #58 in United States ranking among Top 1000 Scientists in Computer Science in theworld, Research.com in its 2022 Edition

2021 Fellow, National Academy of Inventors (NAI)

2021 Co-Advisor, Best Student Paper Award, Zengmei Zhuo, Xin Luo, and MengChu Zhou, "An Auxiliary Learning Task- Enhanced Graph Convolutional Network Model for Highly-accurate Node Classification on Weakly Supervised Graphs," *2021 IEEE International Conference on Smart Data Services*, September 5-11, 2021.

2020 Meritorious Service Award for meritorious and significant service to SMC as VP Conferences & Meetings and SMCS Secretary, IEEE Systems, Man, and Cybernetics Society

2020 Best Application Paper Award, H. Yuan, J. Bi and M. Zhou, "Energy Cost and Performance-Sensitive Bi-objective Scheduling of Tasks in Clouds," *2020 IEEE 17th International Conference on Networking, Sensing and Control* (ICNSC), Nanjing, China

2020 Best Paper Award, Y. Wang, K. Plataniotis, J. Wang, M. Hou, M. Zhou, N. Howard, J. Peng, R. Huang, S. Patel, and D. Zhang, "The Cognitive and Mathematical Foundations of Analytic Epidemiology," in Proc. of the 19th IEEE International Conference on Cognitive Informatics and Cognitive Computing (ICCI*CC'20), Beijing, China, Sept. 26-28, 2020.

2020 Edison Patent Award (for the patent titled *Vacuum Distillation and Desalination*, **U.S Patent 10661194**), the Research& Development Council of New Jersey

2019 Excellence in Research Prize and Medal, New Jersey Institute of Technology 2019 Highly cited scholar in engineering by Web of Science/Clarivate Analytics 2018 Highly cited scholar in engineering by Web of Science/Clarivate Analytics

2018 Outstanding Researcher Award, Newark College of Engineering, New Jersey Institute of Technology

2018 M. Ghahramani, M. Zhou (Advisor) and C. T. Hon, "Spatio-temporal analysis of mobile phone data for interaction recognition," in *Proc. of 2018 IEEE 15th International Conference on Networking, Sensing and Control* (ICNSC),Zhuhai, China, March 27-29, 2018 (Best Student Paper Award).

Journal Editorship

1. Editor-in-Chief, IEEE/CAA Journal of Automatica Sinica, 2018-2022
2. Associate Editor, IEEE Internet of Things Journal, 2018-present
3. Associate Editor, Research, 2021-present
4. Editorial Advisory Board Member, Journal of Industrial Information Integration, 2020-present
5. Associate Editor, IEEE/CAA Journal of Automatica Sinica, 2014-2016
6. Deputy Editor-in-Chief, IEEE/CAA Journal of Automatica Sinica, 2017-2018
7. Editorial Board Member, Frontiers of Information Technology & Electronic Engineering, 2015-
8. Founding Editor, IEEE Press Book Series on Systems Science and Engineering, 2011-present
9. Editor, IEEE Trans. on Automation Science and Engineering, 2008-2013
10. Associate Editor, IEEE Trans. on Intelligent Transportation Systems, 2012-present
11. Associate Editor, IEEE Trans. on Automation Sciences and Engineering, 2004-2007
12. Associate Editor, IEEE Trans. on Industrial Informatics, 2006-2015
13. Associate Editor, IEEE Trans. on Systems, Man, and Cybernetics: Systems, 2013-2016, 2019-present
14. Associate Editor, IEEE Trans. on Systems, Man, and Cybernetics, Part A: Systems and Humans, 2003-2013
15. Associate Editor, IEEE Trans. on Systems, Man, and Cybernetics, Part B: Cybernetics, 2002-2005
16. Managing Editor, IEEE Trans. on Systems, Man, and Cybernetics, Part C: Review and Applications, 2005-2008,
17. Editor, International Journal of Intelligent Control and Systems, 1996-2004
18. Editor-in-Chief, International Journal of Intelligent Control and Systems, 2005-2011
19. AE, IEEE Trans. on Robotics and Automation, 1997-2000
20. Member of the Editorial Review Board, International Journal of Cognitive Informatics and Natural Intelligence, 2005-present
21. Member of the Editorial Board, Enterprise Information Systems, 2008-present
22. Member of the Editorial Advisory Board of the Advances in Cognitive Informatics and Natural Intelligence (ACINI)Book Series, IGI, www.idea-group.com, 2007-present
23. Editorial Board Member, Journal of Engineering and Applied Science, 2007-present.
24. Editorial Board Member, Journal of Zhejiang University-Science C (Computers and Electronics),(http://www.zju.edu.cn/jzus/), 2009-2014

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