Jiawen WEI

✉ jiawenw@u.nus.edu | ⌱ https://github.com/Gwen-JW | 🖥 MatheXLab: https://www.mathexlab.com

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Education

PhD student in Mechanical Engineering   *08/2022 - 06/2026 (Expected)*
College of Design and Engineering, National University of Singapore (NUS), Singapore.
- Advisor: Prof. Gianmarco MENGALDO
- NUS research scholarship

Master of Science in Control Science and Engineering, Central South University(CSU), PRC.   *09/2018 - 06/2021*
- Advisor: Prof. Zhifeng QIU and Prof. Ning GUI
- Academic Scholarship

Bachelor of Science in Automation, Central South University(CSU), PRC.   *09/2014 - 06/2018*
- First Prize in National University Students Intelligent Car Race
- Academic Scholarship, Outstanding Students

Publications

Wei, J., Wang, F., Zeng, W., Lin, W., & Gui, N. (2022, August). An Embedded Feature Selection Framework for Control. *In Proceedings of the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (pp. 1979-1988).*

Wei, J., Qiu, Z., Wang, F., Lin, W., Gui, N., & Gui, W. (2022). Understanding via Exploration: Discovery of Interpretable Features With Deep Reinforcement Learning. *IEEE Transactions on Neural Networks and Learning Systems.*

Professional Experience

PhD research project   *08/2022 - Present*
Advisor: Prof. Gianmarco MENGALDO
- Neural network interpretability and evaluation for time series, images, texts.
- Discovery of patterns based on interpretability

Research Assistant   *06/2021 - 07/2022*
Computer Science and Engineering, CSU, PRC. Advisor: Prof. Ning GUI.
- Active flow control and optimal sensor placement, physics-based structured learning of incompressible fluid dynamics

Automatic generation of object knowledge based on deep reinforcement learning   *09/2019 - 05/2022*
- This project is awarded by National Natural Science Foundation of China (NSFC).
- Automatic evaluation of feature contribution, identification and extraction of the sub-system, refinement of structural parameters of mechanical systems

Modeling and control optimization of distillation tower in the chemical industry   *07/2018 - 10/2019*
This project is awarded by the Ministry of Industry and Information Technology of PRC.

Wind power prediction   *09/2017 - 06/2018*

Intelligent automotive system guided by camera   *12/2015 - 08/2017*

Skills

- Programming Languages: Python, C/C++, MATLAB, LaTeX.
- Frameworks and tools: PyTorch, Tensorflow, Scikit-learn, Docker, Anaconda, git, etc.
- Language: Chinese (mother tongue), English (fluent)

Research Interests

Explainable Artificial Intelligence (XAI), Pattern discovery.