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个人信息

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会员资格: Member of IEEE
Member of IEEE Computational Intelligence Society (CIS)
编委: 副主编, Computers and Electrical Engineering (中科院分区计算机科学 3 区)
客座编委, Engineering Applications of AI (中科院分区计算机科学 2 区 Top)
主题: *Advanced machine learning for the maritime industry*
客座编委, Information Fusion (中科院分区计算机科学 1 区 Top)
主题: *Multi-source data fusion for sustainable cities*
客座编委, Computers and Electrical Engineering (中科院分区计算机科学 3 区)
主题: *Randomization-based deep and shallow learning algorithms*
分会主席, PC Member, ICONIP2023 (CCF C)
评审编委, Frontiers in Marine Science (中科院分区生物学 2 区 Top)
谷歌学术: <https://scholar.google.com/citations?user=PrIHu7QAAAAJ&hl=zh-CN&oi=ao>
总引: 545
H-指数: 12

教育背景

- 08/2018-09/2022, 博士, 人工智能, 南洋理工大学, 新加坡。
毕业论文题目: Electricity load forecasting by randomized neural networks
毕业论文于 2021 年 11 月提交
博士学位授予于 2022 年 9 月 30 日
- 07/2017-06/2018, 硕士, 通信工程, 南洋理工大学, 新加坡。
- 09/2013-07/2017, 学士, 通信工程, 吉林大学, 中国。

获奖

08/2018-09/2022, 南洋理工大学全额奖学金

工作经历

- 10/2022-目前, 博士后研究员, 南洋理工大学, 新加坡。
- 11/2021-10/2022, 项目经理, 南洋理工大学, 新加坡。

科研方向

- 时间序列预测/分类/异常检测
- 机器学习和深度学习
- 信号分解
- 人工智能在海事/交通/能源行业的应用

发表期刊论文(第一作者或通讯作者)

1. **Gao, R.**, Li, R., Hu, M., Suganthan, P. N., & Yuen, K. F.* (2023). Dynamic ensemble deep echo state network for significant wave height forecasting. *Applied Energy*, 329, 120261.
影响因子: 11.2 中科院分区: 工程技术 1 区 Top JCR 分区: Q1
2. **Gao, R.**, Li, R., Hu, M., Suganthan, P. N.* & Yuen, K. F. (2023). Online dynamic ensemble deep random vector functional link neural network for forecasting. *Neural Networks*, 166, 51-69.
影响因子: 7.8 中科院分区: 计算机科学 1 区 Top JCR 分区: Q1
3. Liang, M., Weng, L., **Gao, R.***, Li, Y., & Du, L. (2024). Unsupervised maritime anomaly detection for intelligent situational awareness using AIS data. *Knowledge-Based Systems*, 111313.
影响因子: 8.8 中科院分区: 计算机科学 1 区 Top JCR 分区: Q1
4. **Gao, R.**, Du, L.* & Yuen, K. F., & Suganthan, P. N. (2021). Walk-forward empirical wavelet random vector functional link for time series forecasting. *Applied Soft Computing*, 108, 107450.
影响因子: 8.7 中科院分区: 计算机科学 1 区 Top JCR 分区: Q1
5. **Gao, R.**, Du, L.* & Duru, O., & Yuen, K. F. (2021). Time series forecasting based on echo state network and empirical wavelet transformation. *Applied Soft Computing*, 102, 107111.
影响因子: 8.7 中科院分区: 计算机科学 1 区 Top JCR 分区: Q1
6. Du, L., **Gao, R.***, Suganthan, P. N.* & Wang, D. Z. (2022). Graph ensemble deep random vector functional link network for traffic forecasting. *Applied Soft Computing*, 131, 109809.
影响因子: 8.7 中科院分区: 计算机科学 1 区 Top JCR 分区: Q1
7. Du, L., **Gao, R.***, Suganthan, P. N.* & Wang, D. Z. (2022). Bayesian optimization based dynamic ensemble for time series forecasting. *Information Sciences*, 591, 155-175. ESI 高被引 (Top 1%)
影响因子: 8.1 中科院分区: 计算机科学 1 区 Top JCR 分区: Q1
8. **Gao, R.**, Cheng, W. X., Suganthan, P., & Yuen, K. F.* (2022). Inpatient discharges forecasting for Singapore hospitals by machine learning. *IEEE Journal of Biomedical and Health Informatics*.
影响因子: 7.7 中科院分区: 医学 2 区 Top JCR 分区: Q1
9. **Gao, R.***, & Duru, O. (2020). Parsimonious fuzzy time series modelling. *Expert Systems with Applications*, 156, 113447.
影响因子: 8.5 中科院分区: 计算机科学 1 区 Top JCR 分区: Q1
10. **Gao, R.**, Du, L., Suganthan, P. N.* & Zhou, Q., & Yuen, K. F.* (2022). Random vector functional link neural network based ensemble deep learning for short-term load forecasting. *Expert Systems with Applications*, 206, 117784.
影响因子: 8.5 中科院分区: 计算机科学 1 区 Top JCR 分区: Q1
11. **Gao, R.**, Liu, J., Zhou, Q., Duru, O., & Yuen, K. F.* (2022). Newbuilding ship price forecasting by parsimonious intelligent model search engine. *Expert Systems with Applications*, 201, 117119.
影响因子: 8.5 中科院分区: 计算机科学 1 区 Top JCR 分区: Q1
12. **Gao, R.***, Duru, O., & Yuen, K. F. (2021). High-dimensional lag structure optimization of fuzzy time series. *Expert Systems with Applications*, 173, 114698.
影响因子: 8.5 中科院分区: 计算机科学 1 区 Top JCR 分区: Q1
13. **Gao, R.**, Li, R., Hu, M., Suganthan, P. N., & Yuen, K. F. (2023). Significant wave height forecasting using hybrid ensemble deep randomized networks with neurons pruning. *Engineering Applications of Artificial Intelligence*, 117, 105535.
影响因子: 8.0 中科院分区: 计算机科学 2 区 Top JCR 分区: Q1
14. **Gao, R.**, Du, L.* & Yuen, K. F. (2020). Robust empirical wavelet fuzzy cognitive map for time series forecasting. *Engineering Applications of Artificial Intelligence*, 96, 103978.
影响因子: 8.0 中科院分区: 计算机科学 2 区 Top JCR 分区: Q1
15. **Gao, R.**, Liu, J., Bai, X., & Yuen, K. F.* (2022). Annual dilated convolution neural network for newbuilding ship prices forecasting. *Neural Computing and Applications*, 1-11.

影响因子: 6.0 中科院分区: 计算机科学 3 区 JCR 分区: Q2

16. **Gao, R.**, Liu, J., Du, L., & Yuen, K. F*. (2022). Shipping market forecasting by forecast combination mechanism. *Maritime Policy & Management*, 1-16.

影响因子: 3.5 中科院分区: 工程技术 3 区 JCR 分区: Q3

其他合著论文 (部分)

1. Snášel, V., Štěpnička, M., Ojha, V., Suganthan, P. N., **Gao, R.**, & Kong, L. (2023). Large-scale data classification based on the integrated fusion of fuzzy learning and graph neural network. *Information Fusion*, 102067.

影响因子: 18.6 中科院分区: 计算机科学 1 区 Top JCR 分区: Q1

2. Hu, M., **Gao, R.** & Suganthan, P. N.*(2023). Self-Distillation for Randomized Neural Networks. *IEEE Transactions on Neural Networks and Learning Systems*.

影响因子: 10.4 中科院分区: 计算机科学 1 区 Top JCR 分区: Q1

3. Kong, L., Ojha, V., **Gao, R.**, Suganthan, P. N., & Snášel, V.* (2023). Low-rank and global-representation-key-based attention for graph transformer. *Information Sciences*, 642, 119108.

影响因子: 8.1 中科院分区: 计算机科学 1 区 Top JCR 分区: Q1

4. Li, R., **Gao, R.**, Suganthan, P. N.*, Cui, J., Sourina, O., & Wang, L. (2023). A spectral-ensemble deep random vector functional link network for passive brain-computer interface. *Expert Systems with Applications*, 227, 120279.

影响因子: 8.5 中科院分区: 计算机科学 1 区 Top JCR 分区: Q1

5. Wang, Z., **Gao, R.**, Wang, P., & Chen, H.* (2023). A new perspective on air quality index time series forecasting: A ternary interval decomposition ensemble learning paradigm. *Technological Forecasting and Social Change*, 191, 122504.

影响因子: 12.0 中科院分区: 管理学 1 区 Top JCR 分区: Q1

6. Li, R., **Gao, R.**, & Suganthan, P. N.* (2023). A decomposition-based hybrid ensemble CNN framework for driver fatigue recognition. *Information Sciences*, 624, 833-848.

影响因子: 8.1 中科院分区: 计算机科学 1 区 Top JCR 分区: Q1

7. Luo, X., **Gao, R.**, Chen, H. H.*, Chen, S., Guo, Q., & Suganthan, P. N. (2022). Multi-Modal and Multi-User Semantic Communications for Channel-Level Information Fusion. *IEEE Wireless Communications*.

影响因子: 12.9 中科院分区: 计算机科学 1 区 Top JCR 分区: Q1

发表会议论文(部分)

1. **Gao, R.**, Yang, S., Yuan, M., Song, X., Suganthan, P. N., & Ang, W. T. (2023, June). Online ensemble deep random vector functional link for the assistive robots. In 2023 International Joint Conference on Neural Networks (IJCNN) (pp. 1-8). IEEE.

中国计算机学会 CCF-C

2. Yang, S.*, **Gao, R.**, Li, L., & Ang, W. T. (2022). Deep Randomized Feed-forward Networks Based Prediction of Human Joint Angles Using Wearable Inertial Measurement Unit: Performance Comparison. *International Joint Conference on Neural Networks (IJCNN)*

中国计算机学会 CCF-C

3. Du, L., **Gao, R.***, Wang, D. Z., & Suganthan, P. N. (2022). Time Series Forecasting Using Online Performance-based Ensemble Deep Random Vector Functional Link Neural Network. *International Joint Conference on Neural Networks (IJCNN)*

中国计算机学会 CCF-C

4. Hu, M., **Gao, R.**, & Suganthan, P. N.* (2022). Deep Reservoir Computing Based Random Vector Functional Link for Non-sequential Classification. *International Joint Conference on Neural Networks (IJCNN)*

中国计算机学会 CCF-C

5. **Gao, R.***, Suganthan, P. N., Zhou, Q., Yuen, K. F. & Tanveer, M. (2022). Echo state neural network based ensemble deep learning for short-term load forecasting. IEEE symposium on computational intelligence in ensemble learning (CIEL)

Oral Presentation

6. Li, R.*, **Gao, R.**, Cui, J., Suganthan, P. N., & Olga, S. (2022). Advanced Ensemble Deep Random Vector Functional Link for Eye-Tracking-based Situation Awareness Recognition. IEEE symposium on computational intelligence in ensemble learning (CIEL)

Oral Presentation

7. Li, R.*, Cui, J., **Gao, R.**, Suganthan, P. N., Olga, S., Wang, L., & Chen, C. H. (2022). Situation Awareness Recognition Using EEG and Eye-Tracking data: a pilot study. IEEE International Conference on Cyberworlds

参与项目

项目名称: Novel context-aware multivariate time series modelling for underground transportation infrastructure monitoring and management

用于地下交通基础设施监控和管理的新型上下文感知多元时间序列建模

项目来源: AI Singapore (新加坡人工智能计划)

项目经费: 100 万新加坡元 (约 530 万人民币)

主持/参与: 参与

负责工作: 针对分布式声学传感系统采集到的时空序列数据建模, 研发用于多传感器时间序列异常检测的 Transformer 神经网络, 以实现铁轨健康状况的智能实时检测。

项目名称: Intelligent Human-Robot Interface for Upper Limb Wearable Robots

上肢可穿戴机器人的智能人机接口技术研究

项目来源: A*Star and National Robotics Group (新加坡科技研究局与国家机器人集团)

项目经费: 96.8 万新加坡元 (约 510 万人民币)

主持/参与: 参与

负责工作: 针对惯导传感器采集到的多元时间序列数据, 开发用于人体多关节角度预测的智能模型, 以实现基于学习的运动意图预测, 并用于控制上肢辅助机器人。

项目名称: Safety 4.0: AI-Driven Ship Safety Management System

安全 4.0: 人工智能驱动的船舶安全管理系统

项目来源: Singapore Maritime Institute (新加坡海事学院)

项目经费: 60 万新加坡元 (约 318 万人民币)

主持/参与: 参与

负责工作: 采集船员健康检测数据, 与船舶历史事故数据相结合, 使用智能算法预测船舶安全分数, 进一步推荐风险控制措施, 以提高船舶行驶安全, 同时改善船员福祉。

教学经验

🎓 课程助教:

数据科学与人工智能

计算思维: Python 程序设计

海事数学

🎓 协助指导博士生/硕士生/本科生:

08/2022-目前, 机器学习在可再生能源中的应用, 程汝可 (博士生, 女)

11/2021-07/2022, 用于期租费率预测的年度空洞卷积循环神经网络, 莫际仙 (博士生, 女)

受邀学术报告

1. 武汉理工大学, 随机化网络在时间序列预测中的应用与挑战, 2023/11
2. 上海海事大学, 随机化网络在时间序列预测中的应用与挑战, 2023/11

国际期刊/会议审稿人

IEEE: TNNLS, TCYB, TSMC-Systems, TVT, TETCI, TFS

Elsevier: PRJ, ASOC, EAAI, ESWA, KBS, Applied Energy

Springer: NCAA

IJCNN, ICONIP, CAAI, PVLDB, CIKM

推荐人

Dr. Cong Gao (丛高, 博士后导师)

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Assistant Professor

Program Director of MSc (Maritime Studies)

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Dr. Suganthan P. N. (共同导师)

IEEE Fellow

Professor

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Dr. Chen Hsiao-Hwa (合著作者)

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Indian Institute of Technology Indore, India

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Dr. David Z.W. Wang (合著作者)

Associate Professor

School of Civil and Environmental Engineering, Nanyang Technological University, Singapore.

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