Xingchen Hu

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EDUCATION

Ph.D.   Software Engineering and Intelligent Systems, University of Alberta, Edmonton, Canada, 2017

M.E.   Control Science and Engineering, National University of Defence Technology, Changsha, China, 2013

B.E.   Flight Vehicle Design and Engineering, Beihang University, Beijing, China, 2011

PROFESSIONAL EXPERIENCE

2020–present   National University of Defence Technology
Associate Professor, College of Systems Engineering

2018–2020   National University of Defence Technology
Assistant Professor, College of Systems Engineering

RESEARCH AREAS

Computational intelligence, Granular computing, Multi-view clustering, Federated learning, and Evolutionary optimization.

PUBLICATIONS

Journal Articles

2024   **Xingchen Hu**, Xiubin Zhu, Lan Yang, Witold Pedrycz, Zhiwu Li. "A Design of Fuzzy Rule-based Classifier for Multi-class Classification and its Realization in Horizontal Federated Learning." *IEEE Transactions on Fuzzy Systems*(2024), doi:10.1109/TFUZZ.2024.3412983

2024   Yan Li, **Xingchen Hu**, Tuanfei Zhu, Jiyuan Liu, Xinwang Liu, Zhong Liu. "Discriminative Embedded Multi-view Fuzzy C-Means Clustering for Feature-redundant and Incomplete Data." *Information Sciences*(2024), doi:10.1016/j.ins.2024.120830

2024   Huimin Zhang, **Xingchen Hu**, Xiubin Zhu, Xinwang Liu, Witold Pedrycz. "Application of Gradient Boosting in the Design of Fuzzy Rule-Based Regression Models." *IEEE Transactions on Knowledge and Data Engineering*(2024), doi:10.1109/TKDE.2024.3392247

2024   Xiubin Zhu, **Xingchen Hu**, Lan Yang, Witold Pedrycz, Zhiwu Li. "A Development of Fuzzy Rule-based Regression Models through Using Decision Trees." *IEEE Transactions on Fuzzy Systems*(2024), doi:10.1109/TFUZZ.2024.3365572

2023   **Xingchen Hu**, Jindong Qin, Yinghua Shen, Witold Pedrycz, Xinwang Liu, and Jiyuan Liu. "An Efficient Federated Multi-view Fuzzy C-Means Clustering Method." *IEEE Transactions on Fuzzy Systems*(2023), doi:10.1109/TFUZZ.2023.3335361

2023   Yan Li, **Xingchen Hu**, Witold Pedrycz, Fangjie Yang, and Zhong Liu. "Multivariable fuzzy rule-based models and their granular generalization: A visual interpretable framework." *Applied Soft Computing*, 134 (2023): 109958. doi:10.1016/j.asoc.2022.109958

2023   Jing Yang, Minghua Lu,**Xingchen Hu**, and Jinping Wu. "An approach to solving the incoming target based on uncertain time series." *Journal of System Simulation*, 35, no. 6 (2023): 1245-1259. doi:10.1016/j.buildenv.2023.110827

2022   **Xingchen Hu**, Xinwang Liu, Witold Pedrycz, Qing Liao, Yinghua Shen, Yan Li, and Siwei Wang. "Multi-view fuzzy classification with subspace clustering and information granules." *EEE Transactions on Knowledge and Data Engineering*,(2022). doi:10.1109/TKDE.2022.3231929

2021   Yan Li, Chao Chen, **Xingchen Hu**, Jindong Qin, and Yang Ma. "Fuzzy Rule-Based Models: A Design with Prototype Relocation and Granular Generalization." *Information Sciences*, 562: 155-179. doi:10.1016/j.ins.2020.12.093

2021   **Xingchen Hu**, Yinghua Shen, Witold Pedrycz, Yan Li, and Guohua Wu. "Granular Fuzzy Rule-Based Modeling With Incomplete Data Representation." *IEEE transactions on cybernetics*, 52, no. 7: 6420-6433. doi:10.1109/TCYB.2021.3071145

2021   **Xingchen Hu**, Yinghua Shen, Witold Pedrycz, Xianmin Wang, Adam Gacek, and Bingsheng Liu. "Identification of fuzzy rule-based models with collaborative fuzzy clustering." *IEEE transactions on cybernetics* 52, no. 7 (2021): 6406-6419. doi:10.1109/TCYB.2021.3069783

2021   **Xingchen Hu**, Witold Pedrycz, Keyu Wu, and Yinghua Shen. "Information granule-based classifier: A development of granular imputation of missing data." *Knowledge-Based Systems*,214 (2021): 106737 . doi:10.1016/j.knosys.2020.106737

2020   Guangyin Jin, Qi Wang, Cunchao Zhu, Yanghe Feng, Jincai Huang, and **Xingchen Hu**. "Urban Fire Situation Forecasting: Deep sequence learning with spatio-temporal dynamics." *Applied Soft Computing*, 97, 106730 . doi:10.1016/j.asoc.2020.106730

2020   Guohua Wu, Wuxuan Peng, **Xingchen Hu**, Rui Wang, and Huangke Chen. "Configuring differential evolution adaptively via path search in a directed acyclic graph for data clustering." *Swarm and Evolutionary Computation*, 55 (2020): 100690. doi:10.1016/j.swevo.2020.100690

2019   **Xingchen Hu**, Witold Pedrycz, and Xianmin Wang. "Random ensemble of fuzzy rule-based models." *Knowledge-Based Systems*, 181 : 104768. doi:10.1016/j.knosys.2019.05.011

2019   **Xingchen Hu**, Witold Pedrycz, and Dianhui Wang. "Fuzzy rule-based models with randomized development mechanisms." *Fuzzy Sets and Systems*, 361 (2019): 71-87. doi:10.1016/j.fss.2018.09.001

2018   **Xingchen Hu**, Witold Pedrycz, and Xianmin Wang. "Fuzzy classifiers with information granules in feature space and logic-based computing." *Pattern Recognition*,80, 156-167. doi:10.1016/j.patcog.2018.03.011

2017   **Xingchen Hu**, Witold Pedrycz, and Xianmin Wang. "Development of granular models through the design of a granular output spaces." *Knowledge-Based Systems*, 134, 159-171. doi:10.1016/j.knosys.2017.07.030

2017   **Xingchen Hu**, Witold Pedrycz, Guohua Wu, and Xianmin Wang. "Data reconstruction with information granules: An augmented method of fuzzy clustering." *Applied Soft Computing*, 55, 523-532. doi:10.1016/j.asoc.2017.02.014

2017   **Xingchen Hu**, Witold Pedrycz, and Xianmin Wang. "From fuzzy rule-based models to their granular generalizations." *Knowledge-Based Systems*, 124, 133-143. doi:10.1016/j.knosys.2017.03.007

2017   **Xingchen Hu**, Witold Pedrycz, Oscar Castillo, and Patricia Melin. "Fuzzy rule-based models with interactive rules and their granular generalization." *Fuzzy Sets and Systems*, 307, 1-28. doi:10.1016/j.fss.2016.03.005

2016   **Xingchen Hu**, Witold Pedrycz, and Xianmin Wang. "Granular fuzzy rule-based models: A study in a comprehensive evaluation and construction of fuzzy models." *IEEE Transactions on Fuzzy Systems*, 25(5), 1342-1355. doi:10.1109/TFUZZ.2016.2612300

2016   **Xingchen Hu**, Witold Pedrycz, and Xianmin Wang. "Optimal allocation of information granularity in

system modeling through the maximization of information specificity: A development of granular input space." *Applied Soft Computing*, 42, 410-422. doi:10.1016/j.asoc.2016.02.001

2016   **Xingchen Hu**, Witold Pedrycz, and Xianmin Wang.. "Comparative analysis of logic operators: a perspective of statistical testing and granular computing." *International Journal of Approximate Reasoning*, 66, 73-90. doi:10.1016/j.ijar.2015.07.011

Conference Proceedings

2019   **Xingchen Hu**, Huangke Chen, Chao Chen, Boliang Sun, Jincai Huang, and Kuihua Huang. "Allocation of Information Granularity: A Multi-Objective Evolutionary Optimization Using Conflict Information." *In 2019 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE)* pp. 1-6. IEEE. doi:10.1109/FUZZ-IEEE.2019.8858939

2019   Yinghua Shen, Witold Pedrycz, Ronei Marcos De Moraes, **Xingchen Hu**, Xianmin Wang, and Adam Gacek. "Clustering of Information Granules in Hotspot Identification." *In 2019 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE)*, pp. 1-6. IEEE. doi:10.1109/FUZZ-IEEE.2019.8858904

SERVICE

Academic Journal Editorship

Editorial board, *Computer Science*, 2023–

Editorial board, *Journal of National University of Defence Technology* , 2023–

Guest Editor, *International Journal of General Systems*, 2022

Guest Editor, *Frontiers in Neurorobotics*, 2022

Academic Journal Peer Review

IEEE Transactions on Cybernetics

IEEE Transactions on Fuzzy Systems

IEEE Transactions on Neural Networks and Learning Systems

IEEE Transactions on Emerging Topics in Computational Intelligence

Information Sciences

Knowledge-Based Systems

Applid Soft Computing