Chen Hong (陈鸿)

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Research Interests: Artificial Intelligence, Deep Learning, Machine Learning, Data Mining

EDUCATION

Hong Kong University of Science and Technology (Guangzhou) — Guangzhou, China
Master of Philosophy in Artificial Intelligence — Aug. 2024 - Aug. 2026

National University of Singapore — Singapore, Singapore
Master of Technology in Enterprise Business Analytics — Aug. 2023 - Aug. 2024

Beijing Normal University-Hong Kong Baptist University United International College — Zhuhai, China
B.S with First Class Honors in Financial Mathematics GPA: 3.46/4.00 — Sep. 2019 - Jun. 2023
Minor in Computer Science and Technology

RESEARCH EXPERIENCE

♦ Publication

1. Congyu Cai, **Hong Chen**, Yunxuan Liu, Daoquan Chen, Xiuze Zhou, Yuanguo Lin, "Graph-based Feature Crossing to Enhance Recommender Systems", Mathematics (**JCR Q1, IF= 2.3**), Jan, 2025 [1].
2. Xiang Liu, Zhenheng Tang, **Hong Chen**, Peijie Dong, Zeyu Li, Xiuze Zhou, Bo Li, Xuming Hu, Xiaowen Chu, "Can LLMs Maintain Fundamental Abilities under KV Cache Compression?", TBD, Feb. 2025 [2].
3. Yuanguo Lina, **Hong Chen**, Xiuze Zhou, Wei Zhang, Huanyu You, Fan Lin, and Pengcheng Wu, "Evolutionary Reinforcement Learning for Explainable Recommendation on Knowledge Graph", TBD, Feb. 2025.
4. Yuanguo Lin, Fan Lin, Guorong Cai, **Hong Chen***, Lixin Zou, Pengcheng Wu, "Evolutionary Reinforcement Learning: A Systematic Review and Future Directions", TBD, Dec. 2024 [3].
5. Yuanguo Lin, **Hong Chen**, Wei Xia, Fan Lin, Zongyue Wang, Yong Liu, "A Comprehensive Survey on Deep Learning Techniques in Educational Data Mining", TBD, Sep. 2023 [4].

♦ Internship

Tencent Technology (Shenzhen) Co.Ltd — Shenzhen, China
Business Analysis Intern — Mar. 2024 - Aug. 2024

- Track and analyze the latest trends in the gaming industry, including market dynamics and competitive landscapes.
- Compile and synthesize industry and market data to produce regular reports on game products.
- Evaluate game operational strategies to inform business strategies and industry assessments.

Xiamen University, Pingtan Research Institute of Xiamen University — Fuzhou, China
Research Intern — Jul. 2021 - Present

- Participated in the creation of the NNSF project and was responsible for collecting and sorting out the literature of multi-agent and constructing a multi-agent-based project-oriented intelligent tutoring system.
- Participated in the construction of the Pingtan Institute of Xiamen University's official website and was responsible for information crawling and icon design.

RELATED PROJECTS

♦ Mathematical Model

Investment Strategy of Gold and Bitcoin Based on ARIMA
Feb. 2022 in MCM/ICM

- The ARIMA time series model is built to predict the price of gold and bitcoin.
- The analytic hierarchy process is used to assign weight to several indicators in the decision model, and the purchase scoring model is established in combination with risk assessment.
- The trading process under different commission levels is simulated, and the impact of commission on trading strategy and final assets is analyzed.

♦ Patents

An Explainable MOOC Recommendation Method, Terminal Device, and Storage Medium
Oct. 2022, authorized

- Proposed an explainable MOOC recommendation method which can construct explicit information and implicit feedback in knowledge graph and perform recommendation path reasoning through deep reinforcement learning.
- Modeling learner behaviors and knowledge states using coarse-grained course representation and fine-grained concept representation.
- Constructing self-supervised reinforcement learning model containing actor network and path discriminator for multi-hop path reasoning.
- Training the reinforcement learning model using actor-critic algorithm to achieve explainable course recommendation.

A Method and System for Textile Process Management based on Virtual Reality and Evolutionary Reinforcement Learning
Apr. 2024, authorized

- The system uses VR to simulate textile operations, providing immersive training and operation optimization.
- It applies CNN and LSTM for feature extraction from real-time and historical data to identify key production indicators.
- An ESRL engine employs reinforcement learning algorithms to optimize the textile process, using an MDP framework for decision-making and parameter optimization.

AWARD AND OTHERS

♦ Award

- Feb. 2022, Honorable Mention in Mathematical Contest In Modeling (MCM/ICM).
- Sep. 2022, Third Prize of Guangdong Province in China Undergraduate Mathematical Contest in Modeling (CUMCM).
- Jun. 2022, Second Class Scholarship in BNU-HKBU UIC.
- Jun. 2023, First Class Scholarship in BNU-HKBU UIC.

♦ Standardized Examination Performance

- IELTS (Offline): Listening-8.0, Reading-8.0, Speaking-7.0, Writing-6.5, Overall-7.5
- GRE (Offline): Verbal-159, Quantitative-168, Overall-327

References

[1] C. Cai, H. Chen, Y. Liu, D. Chen, X. Zhou, and Y. Lin, "Graph-based feature crossing to enhance recommender systems," *Mathematics*, vol. 13, no. 2, p. 302, 2025.

[2] X. Liu, Z. Tang, H. Chen, P. Dong, Z. Li, X. Zhou, B. Li, X. Hu, and X. Chu, "Can llms maintain fundamental abilities under kv cache compression?" *arXiv preprint arXiv:2502.01941*, 2025.

[3] Y. Lin, F. Lin, G. Cai, H. Chen, L. Zou, and P. Wu, "Evolutionary reinforcement learning: A systematic review and future directions," *arXiv preprint arXiv:2402.13296*, 2024.

[4] Y. Lin, H. Chen, W. Xia, F. Lin, P. Wu, Z. Wang, and Y. Liu, "A comprehensive survey on deep learning techniques in educational data mining," *arXiv preprint arXiv:2309.04761*, 2023.