

Shiyu Hu

Research Fellow, Nanyang Technological University, Singapore

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Work Experience

- 2024.08–Present  **Research Fellow, School of Physical and Mathematical Sciences (SPMS), Nanyang Technological University (NTU)**
- **Research:** Computer Vision, Multimodal AI, and AI for Education
 - **PI:** Assoc. Prof. Kang Hao Cheong (IEEE Senior Member)
- 2018.03–2018.11  **Research Assistant, University of Hong Kong (HKU)**
- **Direction:** High Performance Computing, Heterogeneous Computing
 - **PI:** Prof. Choli Wang
- 2016.08–2016.09  **Research Intern, Institute of Electronics, Chinese Academy of Sciences (CASIE)**

Education

- 2019.09–2024.01  **Ph.D., Institute of Automation, Chinese Academy of Sciences (CASIA)**
- **Field:** Computer Application Technology
 - **Supervisor:** Prof. Kaiqi Huang (IAPR Fellow, IEEE Senior Member)
 - **Co-supervisor:** Prof. Xin Zhao (IEEE Senior Member)
 - **Thesis title:** *Research of Intelligence Evaluation Techniques for Single Object Tracking*
 - **Thesis committee:** Prof. Jianbin Jiao, Prof. Yuxin Peng (CAAI/CIE/CSIG Fellow), Prof. Yao Zhao (IEEE/IET Fellow), Prof. Yunhong Wang (IEEE/IAPR/CCF Fellow), Prof. Ming Tang
 - **Thesis defense grade:** Excellent
- 2017.09–2019.07  **M.Sc., Department of Computer Science, University of Hong Kong (HKU)**
- **Field:** Computer Science
 - **Supervisor:** Prof. Choli Wang
 - **Thesis title:** *NightRunner: Deep Learning for Autonomous Driving Cars after Dark*
 - **Thesis defense grade:** A+
- 2013.09–2017.07  **B.E., Elite Class in School of Information and Electronics, Beijing Institute of Technology (BIT)**
- **Field:** Information Engineering
 - **Undergraduate thesis supervisor:** Prof. Senlin Luo
 - **Thesis title:** *Text Sentiment Analysis Based on Deep Neural Network*
 - **Thesis defense grade:** Excellent
- 2015.07–2015.08  **Summer Session, University of California, Berkeley (UC Berkeley)**
- **Course:** New Media
 - **Course grade:** A

Research Interests

My research centers on reliable multimodal intelligence in open and interactive environments. I examine how AI systems maintain object identity, world state, task-relevant evidence, and interaction context when tasks change, observations extend over time, or humans participate.

- Open-World Vision  Dynamic visual perception and world-state modeling under occlusion, interference, and physical disturbances, with a focus on object tracking, vision-language grounding, long-horizon visual memory, and reliable perception for UAVs and embodied systems.

Research Interests (continued)

Multimodal Reasoning ■ Evidence-grounded reasoning in multimodal foundation models, including evidence selection and verification in images and long videos, spatiotemporal and causal reasoning, streaming memory, adaptive visual computation, and process-level verification for multimodal agents.

Human-Centered Agents ■ Human-centered AI agents that model cognitive and learning states, capability boundaries, and social interaction, with education as a representative testbed for personalized agents, virtual students, multi-agent simulation, and reliable human-AI collaboration.

I develop open task spaces, human-grounded evaluation protocols, and process-level diagnostics across these directions. The goal is to identify capability boundaries and failure mechanisms, then use those findings to improve model and system design.

Research Publications

Monograph

- 1 X. Zhao, **S. Hu**, and X. Yin, *Visual Object Tracking - An Evaluation Perspective*. Springer, 2025, ISBN: 978-981-96-4558-9.  DOI: 10.1007/978-981-96-4558-9.

First- and Corresponding-Author Publications

- 1 **S. Hu**, X. Zhao, L. Huang, and K. Huang, "Global instance tracking: Locating target more like humans," *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI, CCF-A)*, vol. 45, no. 1, pp. 576–592, 2023.  DOI: 10.1109/TPAMI.2022.3153312.
- 2 **S. Hu**, X. Zhao, and K. Huang, "SOTVerse: A user-defined task space of single object tracking," *International Journal of Computer Vision (IJCV, CCF-A)*, vol. 132, pp. 872–930, 2024.  DOI: 10.1007/s11263-023-01908-5.
- 3 X. Zhao, **S. Hu** , Y. Wang, J. Zhang, Y. Hu, R. Liu, H. Ling, Y. Li, R. Li, K. Liu, and J. Li, "BioDrone: A bionic drone-based single object tracking benchmark for robust vision," *International Journal of Computer Vision (IJCV, CCF-A)*, vol. 132, pp. 1659–1684, 2024.  DOI: 10.1007/s11263-023-01937-0.
- 4 **S. Hu**, D. Zhang, M. Wu, X. Feng, X. Li, X. Zhao, and K. Huang, "A multi-modal global instance tracking benchmark (MGIT): Better locating target in complex spatio-temporal and causal relationship," *Advances in Neural Information Processing Systems (NeurIPS, CCF-A)*, vol. 36, pp. 25 007–25 030, 2023.
- 5 X. Feng*, **S. Hu***, X. Li, D. Zhang, M. Wu, J. Zhang, X. Chen, and K. Huang, "ATCTrack: Aligning target-context cues with dynamic target states for robust vision-language tracking," in *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV, CCF-A; Highlights)*, 2025, pp. 19 850–19 861.
- 6 X. Li*, X. Li*, and **S. Hu** , "MATrack: Efficient multiscale adaptive tracker for real-time nighttime UAV operations," in *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA, CCF-B)*, 2026.
- 7 X. Li*, X. Li*, and **S. Hu** , "DARTer: Dynamic adaptive representation tracker for nighttime UAV tracking," in *Proceedings of the International Conference on Multimedia Retrieval (ICMR, CCF-B)*, 2025.
- 8 **S. Hu**, X. Zhao, and K. Huang, "Visual intelligence evaluation techniques for single object tracking: A survey," *Journal of Image and Graphics (《中国图象图形学报》)*, vol. 29, no. 8, pp. 2269–2302, 2024.  DOI: 10.11834/jig.230498.
- 9 Y. Wang, J. Zhang, Y. Wang, **S. Hu** , B. Shen, Z. Hou, and W. Zhou, "Improved SAR aircraft detection algorithm based on visual state space models," *IET Computer Vision (IET-CVI, CCF-C)*, vol. 19, no. 1, e70032, 2025.

Collaborative Publications

- 10 X. Li, X. Li, **S. Hu**, and K. Huang, "Select less, reason more: Prioritizing evidence purity for video reasoning," in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR, CCF-A)*, 2026.
- 11 X. Li, X. Li, **S. Hu**, K. Huang, and W. Zhang, "CausalStep: A benchmark for explicit stepwise causal reasoning in videos," in *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI, CCF-A; Oral)*, 2026.
- 12 X. Li, X. Li, **S. Hu**, Y. Guo, and W. Zhang, "VerifyBench: A systematic benchmark for evaluating reasoning verifiers across domains," in *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI, CCF-A; Oral)*, 2026.
- 13 X. Feng, H. Yu, M. Wu, **S. Hu**, J. Chen, C. Zhu, J. Wu, X. Chu, and K. Huang, "NarrLV: Towards a comprehensive narrative-centric evaluation for long video generation models," in *Proceedings of the International Conference on Learning Representations (ICLR, CCF-A)*, 2026.
- 14 X. Li, X. Li, J. Gao, R. Pi, **S. Hu**, and W. Zhang, "Look less, reason more: Rollout-guided adaptive pixel-space reasoning," in *Proceedings of the Annual Meeting of the Association for Computational Linguistics (ACL, CCF-A)*, 2026.
- 15 S. Jia, **S. Hu**, Y. Cao, F. Yang, X. Lu, and X. Lu, "Tracking by detection and query: An efficient end-to-end framework for multi-object tracking," *Pattern Recognition (PR, CCF-B)*, 2026.
- 16 M. Wu, Y. Zhao, X. Li, **S. Hu**, Y. Cai, J. Wu, W. Wang, and K. Huang, "Talk with your fingers: A depth-aware benchmark for air-writing recognition," *IEEE Transactions on Circuits and Systems for Video Technology (TCSVT, CCF-B)*, 2026.  DOI: 10.1109/TCSVT.2026.3670256.
- 17 S. Jia, **S. Hu**, Y. Wang, X. Cheng, Y. Cao, and X. Lu, "COAL: Counterfactual and observation-enhanced alignment learning for discriminative referring multi-object tracking," in *the 35th International Joint Conference on Artificial Intelligence (IJCAI, CCF-B)*, 2026.
- 18 D. Zhang, **S. Hu**, H. Fu, X. Feng, Y. Wang, K. H. Cheong, and K. Huang, "Rethinking temporal modeling in visual object tracking via decoupled auxiliary supervision," in *Proceedings of the European Conference on Computer Vision (ECCV, CCF-B)*, 2026.
- 19 K. Li, B. Parikh, H. Yue, **S. Hu**, S. W. Tan, W. Y. Low, X. Su, and K. H. Cheong, "Global-local semi-supervised modeling for retinal layer boundary estimation in OCT," in *the 48th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC, CAAI-B)*, 2026.
- 20 X. Li, X. Li, **S. Hu**, Z. Zhang, and K. H. Cheong, "Constraint-driven evolution of multimodal video intelligence: A network and system perspective," *IEEE Transactions on Network Science and Engineering (TNSE)*, 2026.
- 21 L. Tan, B. Zhu, **S. Hu**, A. Mishra, D. J. Yeo, and K. H. Cheong, "CalcTutor: Multi-agent LLM grading of handwritten mathematics with RAG-grounded feedback for adaptive learning support," *Mathematics (2227-7390)*, 2026.
- 22 X. Feng, D. Zhang, **S. Hu**, X. Li, M. Wu, J. Zhang, X. Chen, and K. Huang, "CSTrack: Enhancing RGB-X tracking via compact spatiotemporal features," in *Proceedings of the International Conference on Machine Learning (ICML, CCF-A)*, 2025.
- 23 X. Feng, D. Zhang, **S. Hu**, X. Li, M. Wu, J. Zhang, X. Chen, and K. Huang, "Enhancing vision-language tracking by effectively converting textual cues into visual cues," in *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP, CCF-B)*, 2025.
- 24 L. Tan, **S. Hu**, D. J. Yeo, and K. H. Cheong, "Artificial intelligence-enabled adaptive learning platforms: A review," *Computers & Education: Artificial Intelligence (C&E:AI; JIF 23.4; No. 3 of 210 in Artificial Intelligence; highest JIF among AI-in-education journals)*, p. 100 429, 2025.

- 25 L. Tan, **S. Hu**, D. J. Yeo, and K. H. Cheong, "A comprehensive review on automated grading systems in STEM using AI techniques," *Mathematics* (2227-7390), vol. 13, no. 17, 2025.
- 26 Y. Ma, X. Li, **S. Hu**, S. Liu, and K. H. Cheong, "Trustworthy AI in education: Framework, cases, and governance strategies," *Innovation and Emerging Technologies*, vol. 12, p. 2550026, 2025.
- 27 K. Huang, Y. Kang, C. Yan, **S. Hu**, L. Wang, T. Tao, and W. Gao, "A review of intelligent psychological assessment based on interactive environment," *Chinese Mental Health Journal* (《中国心理卫生杂志》), 2025.
- 28 D. Zhang, **S. Hu**, X. Feng, X. Li, M. Wu, J. Zhang, and K. Huang, "Beyond accuracy: Tracking more like human via visual search," *Advances in Neural Information Processing Systems (NeurIPS, CCF-A)*, vol. 37, pp. 2629–2662, 2024.
- 29 X. Feng, X. Li, **S. Hu**, D. Zhang, M. Wu, J. Zhang, X. Chen, and K. Huang, "MemVLT: Visual-language tracking with adaptive memory-based prompts," *Advances in Neural Information Processing Systems (NeurIPS, CCF-A)*, vol. 37, pp. 14903–14933, 2024.
- 30 J. Zhang, T. Zhao, **S. Hu**, and X. Zhao, "Robust single-particle Cryo-EM image denoising and restoration," in *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP, CCF-B)*, 2024.
- 31 M. Wu, K. Huang, Y. Cai, **S. Hu**, Y. Zhao, and W. Wang, "Finger in camera speaks everything: Unconstrained air-writing for real-world," *IEEE Transactions on Circuits and Systems for Video Technology (TCSVT, CCF-B)*, vol. 34, no. 9, pp. 8602–8613, 2024.
- 32 M. Wu, Y. Kang, X. Li, **S. Hu**, X. Chen, Y. Kang, W. Wang, and K. Huang, "VS-LLM: Visual-semantic depression assessment based on LLM for drawing projection test," in *Chinese Conference on Pattern Recognition and Computer Vision (PRCV, CCF-C)*, 2024, pp. 232–246.
- 33 X. Feng, **S. Hu**, X. Chen, and K. Huang, "A hierarchical theme recognition model for sandplay therapy," in *Chinese Conference on Pattern Recognition and Computer Vision (PRCV, CCF-C)*, 2023, pp. 241–252.
- 34 Y. Wang, **S. Hu**, and X. Zhao, "Rethinking similar object interference in single object tracking," in *International Conference on Computer Science and Artificial Intelligence (CSAI, EI; Oral)*, 2023, pp. 251–258.
- 35 Y. Zhang, C. Liu, W. Chen, X. Xu, F. Wang, H. Li, **S. Hu**, and X. Zhao, "Revisiting instance search: A new benchmark using cycle self-training," *Neurocomputing (Neu, CCF-C)*, vol. 501, pp. 270–284, 2022.  DOI: 10.1016/j.neucom.2022.06.027.
- 36 K. Huang, X. Zhao, Q. Li, and **S. Hu**, "Visual turing: The next development of computer vision in the view of human-computer gaming," *Journal of Graphics* (《图学学报》) (CCF-C), vol. 42, no. 3, p. 339, 2021.  DOI: 10.11996/JG.j.2095-302X.2021030339.

Workshop Papers

- 1 Y. Ma*, **S. Hu***, X. Li, Y. Wang, Y. Chen, S. Liu, and K. H. Cheong, "Learning to be taught: A structured SOEI framework for modeling and evaluating personality-aligned virtual student agents," in *AAAI Conference on Artificial Intelligence AI4Edu Workshop (AAAIW, CCF-A Workshop; Oral)*, 2026.
- 2 Y. Ma*, **S. Hu***, B. Zhu, Y. Wang, Y. Kang, S. Liu, and K. H. Cheong, "Redefining educational simulation: EduVerse as a user-defined and developmental multi-agent simulation space," in *AAAI Conference on Artificial Intelligence AI4Edu Workshop (AAAIW, CCF-A Workshop; Oral)*, 2026.
- 3 B. Zhu*, **S. Hu***, Y. Ma, Y. Zhang, and K. H. Cheong, "From objective to subjective: A benchmark for virtual student abilities," in *AAAI Conference on Artificial Intelligence AI4Edu Workshop (AAAIW, CCF-A Workshop; Oral)*, 2026.
- 4 X. Li, X. Feng, **S. Hu**, M. Wu, D. Zhang, J. Zhang, and K. Huang, "DTLLM-VLT: Diverse text generation for visual language tracking based on LLM," in *IEEE/CVF Conference on Computer Vision and Pattern Recognition 3rd VDU Workshop (CVPRW, CCF-A Workshop; Oral, Best Paper Honorable Mention)*, 2024.

Preprints

- 1 X. Li*, **S. Hu***, X. Feng, J. Zhao, and K. Huang, “How to respond, how to memorize, how to be fast: A survey of streaming video understanding,” *SSRN preprint*, 2026.  URL: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=7008298.
- 2 **S. Hu***, X. Li*, X. Li, J. Zhang, Y. Wang, X. Zhao, and K. H. Cheong, “FIOVA: A multi-annotator benchmark for human-aligned video captioning,” *arXiv preprint arXiv:2410.15270*, 2024.
- 3 Y. Ma*, **S. Hu***, X. Li, Y. Wang, Y. Chen, S. Liu, and K. H. Cheong, “When LLMs learn to be students: The SOEI framework for modeling and evaluating virtual student agents in educational interaction,” *arXiv preprint arXiv:2410.15701*, 2024.
- 4 Y. Ma*, **S. Hu***, B. Zhu, Y. Wang, Y. Kang, S. Liu, and K. H. Cheong, “EduVerse: A user-defined multi-agent simulation space for education scenario,” *arXiv preprint arXiv:2510.05650*, 2025.
- 5 B. Zhu*, **S. Hu***, Y. Ma, Y. Zhang, and K. H. Cheong, “EduPersona: Benchmarking subjective ability boundaries of virtual student agents,” *arXiv preprint arXiv:2510.04648*, 2025.
- 6 Y. Wang*, **S. Hu***, S. Jia, P. Xu, H. Ma, Y. Ma, J. Zhang, X. Lu, and X. Zhao, “SOI is the root of all evil: Quantifying and breaking similar object interference in single object tracking,” *arXiv preprint arXiv:2508.09524*, 2025.
- 7 X. Li*, **S. Hu***, X. Feng, D. Zhang, M. Wu, J. Zhang, and K. Huang, “How texts help? a fine-grained evaluation to reveal the role of language in vision-language tracking,” *arXiv preprint arXiv:2411.15600*, 2024.
- 8 X. Li, X. Li, J. Zhao, and **S. Hu** , “STEMVerse: A dual-axis diagnostic framework for STEM reasoning in large language models,” *arXiv preprint arXiv:2602.02497*, 2026.
- 9 X. Li, **S. Hu**, X. Feng, D. Zhang, M. Wu, J. Zhang, and K. Huang, “DTVLT: A multi-modal diverse text benchmark for visual language tracking based on LLM,” *arXiv preprint arXiv:2410.02492*, 2024.
- 10 X. Li, **S. Hu**, X. Feng, D. Zhang, M. Wu, J. Zhang, and K. Huang, “Visual language tracking with multi-modal interaction: A robust benchmark,” *arXiv preprint arXiv:2409.08887*, 2024.
- 11 X. Li, X. Li, R. Pi, **S. Hu**, J. Zhao, and J. Gao, “Beyond accuracy: Evaluating grounded visual evidence in thinking with images,” *arXiv preprint arXiv:2601.11633*, 2026.
- 12 **S. Hu**, X. Zhao, Y. Wang, Y. Shan, and K. Huang, *Nearing or surpassing: Overall evaluation of human-machine dynamic vision ability*, 2023.  URL: https://openreview.net/forum?id=LGbZYw_pnsc.

Projects

Research Software

- 2018.03–2018.11  **Darknet-Cross: Lightweight Deep Learning Framework for Heterogeneous Computing**
 <https://github.com/huuuuusy/Darknet-Cross>
✓ Designed and developed a cross-platform acceleration framework for Android and Ubuntu across mobile and desktop GPUs as an HKU master’s thesis project.

Research Platforms

- 2019.11–Present  **VideoCube / MGIT Platform**
 <http://videocube.aitestunion.com>
✓ Built and continue to maintain the evaluation infrastructure supporting TPAMI 2023 and NeurIPS 2023 studies; recorded 1.66M+ visits, 1.9k+ data users, 720+ registered trackers, and 960+ result submissions by July 2026.

Projects (continued)

- 2021.07–Present  **SOTVerse / VLTVerse Platform**
 <http://metaverse.aitestunion.com>
✓ Built and continue to maintain the task-space evaluation platform supporting IJCV 2024 research; recorded 267k+ visits by July 2026.
- 2022.05–Present  **BioDrone Platform**
 <http://biodrone.aitestunion.com/>
✓ Built and continue to maintain the benchmark platform for real-world drone tracking research published in IJCV 2024; recorded 541k+ visits by July 2026.
- 2020.07–Present  **GOT-10k Platform**
 <http://got-10k.aitestunion.com/>
✓ Maintain the evaluation platform supporting TPAMI 2021 research; recorded 7.56M+ visits, 11k+ data users, 32.7k+ registered trackers, and 406k+ result submissions by July 2026.

Challenges

- 2023.05–2023.11  **Hislopvision Challenge**
 <http://hislopvision.aitestunion.com/>
✓ Organized the Hislopvision track for the 3rd High-speed and Low-power Visual Understanding Challenge at PRCV 2023, with participating teams from Tsinghua University, Beijing Institute of Technology, and Jilin University.
- 2021.01–2021.04  **Cell Tracking Challenge**
 <https://celltrackingchallenge.net/>
✓ Achieved 2nd place on Fluo-C2FL-MSc+ and 3rd place on Fluo-C2FL-Huh7 (rankings as of Oct. 2023).

Funded Research Project

- 2024.01–2025.01  **Human-Computer Interaction in Intelligent Education**
✓ Contributed to proposal development and project delivery for a study funded by the 2023 Intelligent Education PhD Research Fund, Shanghai Institute of AI Education, East China Normal University.

Academic Activities and Services

- Tutorial  **34th International Joint Conference on Artificial Intelligence (IJCAI)**
 - **Title:** Human-Centric and Multimodal Evaluation for Explainable AI: Moving Beyond Benchmarks
 - **Date & Location:** August 18, 2025, Montreal, Canada
-  **28th European Conference on Artificial Intelligence (ECAI)**
 - **Title:** From Benchmarking to Trustworthy AI: Rethinking Evaluation Methods Across Vision and Complex Systems
 - **Date & Location:** October 26, 2025, Bologna, Italy
-  **2025 IEEE International Conference on Systems, Man, and Cybernetics (SMC)**
 - **Title:** The Synergy of Large Language Models and Evolutionary Optimization on Complex Networks
 - **Date & Location:** October 5–8, 2025, Vienna, Austria
-  **17th Asian Conference on Computer Vision (ACCV)**
 - **Title:** From Machine-Machine Comparison to Human-Machine Comparison: Adapting Visual Turing Test in Visual Object Tracking
 - **Date & Location:** December 9, 2024, Hanoi, Vietnam

Academic Activities and Services (continued)

- **27th International Conference on Pattern Recognition (ICPR)**
 - **Title:** Visual Turing Test in Visual Object Tracking: A New Vision Intelligence Evaluation Technique based on Human-Machine Comparison
 - **Date & Location:** December 1, 2024, Kolkata, India
- **31st IEEE International Conference on Image Processing (ICIP)**
 - **Title:** An Evaluation Perspective in Visual Object Tracking: from Task Design to Benchmark Construction and Algorithm Analysis
 - **Date & Location:** October 27, 2024, Abu Dhabi, United Arab Emirates
- Mini-Symposium ■ **The Fifth International Nonlinear Dynamics Conference (NODYCON 2026)**
 - **Title:** Complex Network Systems and Large Language Models
 - **Date & Location:** September 20–23, 2026, Sapienza University of Rome, Italy
- Talk ■ **Chinese Congress on Image and Graphics (CCIG 2026)**
 - **Title:** Visual Understanding Reliability in Open Environments: from Robust Perception to Semantic Consistency
 - **Date & Location:** May 29, 2026, Guangzhou, China
- TPC Member ■ **Pacific Graphics 2026** (CCF-B Conference)
- Guest Editor ■ **Journal:** Electronics (Special Issue: Techniques and Applications of Multimodal Data Fusion)
- Associate Editor ■ **Journal:** Innovation and Emerging Technologies
- Reviewer ■ **Conference:** NeurIPS, ICML, ICLR, CVPR, ECCV, ICCV, ACL, AAAI, IJCAI, ACM MM, ICRA, and AISTATS.
- **Journal:** ACM Computing Surveys, IEEE Transactions on Image Processing, SCIENCE CHINA Information Sciences, Pattern Recognition, Transactions on Machine Learning Research, IEEE Transactions on Network Science and Engineering, IEEE Transactions on Vehicular Technology, Information Fusion, Visual Intelligence, Engineering Applications of Artificial Intelligence, Expert Systems with Applications, Neurocomputing, and Knowledge-Based Systems.
- Member ■ **Society:** Institute of Electrical and Electronics Engineers (IEEE), China Society of Image and Graphics (CSIG), Chinese Association for Artificial Intelligence (CAAI), and China Computer Federation (CCF).

Skills & Interests

- Programming & AI Tools ■ Python, MATLAB, C, Java, JavaScript, HTML/CSS, Shell, Git, and $\text{\LaTeX}$; LLM-assisted coding.
- Research Systems ■ Design, development, deployment, and maintenance of research project platforms; web interfaces and databases using Flask and SQLite; Linux, Android, and heterogeneous computing.
- Academic Leadership ■ Student mentoring and research supervision; grant proposal development and writing; project planning and delivery; cross-institutional collaboration; scholarly writing, peer review, tutorials, and presentations.
- Languages ■ Mandarin Chinese (native) and English.
- Personal Interests ■ Drawing, creative writing, LEGO building, fitness, and distance running; formerly an amateur marathoner.

Honors and Awards

- 2026 ■ **Reviewer Award**, Forty-Third International Conference on Machine Learning (ICML 2026).
- 2025 ■ **IEEE SMCS TEAM Program Award**, the IEEE Systems, Man, and Cybernetics Society.

Honors and Awards (continued)

- 2024 📖 **Best Paper Honorable Mention**, the 3rd Workshop on Vision Datasets Understanding and DataCV Challenge in CVPR 2024.
- 📖 **Beijing Outstanding Graduate**, Beijing Municipal Education Commission (Top 5%).
- 2023 📖 **China National Scholarship**, Ministry of Education of the People's Republic of China (Top 1%).
- 📖 **First Prize of Climbing Scholarship**, Institute of Automation, Chinese Academy of Sciences.
- 2022 📖 **Merit Student**, University of Chinese Academy of Sciences.
- 2017 📖 **Excellent Innovative Student**, Beijing Institute of Technology.
- 2016 📖 **College Scholarship**, Chinese Academy of Sciences.
- 📖 **Excellent League Member on Youth Day Competition**, Beijing Institute of Technology.
- 2015 📖 **National First Prize**, Contemporary Undergraduate Mathematical Contest in Modeling (Top 1%).
- 📖 **First Prize, Mathematical Modeling Competition**, Beijing Institute of Technology.
- 📖 **Outstanding Individual on Summer Social Practice**, Beijing Institute of Technology.
- 📖 **Second Prize on Summer Social Practice**, Beijing Institute of Technology (Team Leader).
- 📖 **Outstanding Student Cadre**, Beijing Institute of Technology.
- 📖 **Outstanding League Cadre on Youth Day Competition**, Beijing Institute of Technology.
- 📖 **Outstanding Youth League Branch**, Beijing Institute of Technology (Team Leader).
- 📖 **Top 10 Activities on Youth Day Competition**, Beijing Institute of Technology (Team Leader).
- 2014 📖 **Outstanding Student**, Beijing Institute of Technology.
- 2013-2017 📖 **Academic Scholarship**, Beijing Institute of Technology.

Student Mentoring and Co-Supervision

- Ph.D. Students 📖 **Xiaokun Feng**, 2023.04–Present, Institute of Automation, Chinese Academy of Sciences
- 📖 **Yiping Ma**, 2023.08–Present, East China Normal University
- 📖 **Dailing Zhang**, 2023.08–Present, Institute of Automation, Chinese Academy of Sciences
- 📖 **Xuchen Li**, 2024.08–Present, Institute of Automation, Chinese Academy of Sciences
- 📖 **Yipei Wang**, 2024.08–Present, Southeast University
- 📖 **Shukun Jia**, 2025.01–Present, Southeast University
- 📖 **Buyuan Zhu**, 2025.01–Present, Nanyang Technological University, Singapore
- 📖 **Zi Ye**, 2025.08–Present, University of Science and Technology Beijing
- 📖 **Yihan Meng**, 2025.08–Present, University of Science and Technology Beijing
- 📖 **Shunya Hirashima**, 2026.02–Present, Nanyang Technological University, Singapore
- 📖 **Meiqi Wu**, 2022.08–2025.06, University of Chinese Academy of Sciences
- M.S. Students 📖 **Xuzhao Li**, 2024.07–Present, Beijing Institute of Technology
- 📖 **Panxi Xu**, 2024.09–Present, University of Science and Technology Beijing
- 📖 **Hongfei Ma**, 2025.07–Present, University of Science and Technology Beijing
- 📖 **Yiping Ma**, 2022.05–2023.07, Nanjing Normal University
- 📖 **Yipei Wang**, 2022.08–2024.07, Southeast University
- 📖 **Yuqi Cui**, 2024.07–2025.01, University of Science and Technology Beijing
- 📖 **Nguyen Khanh Truong**, 2025.02–2025.11, Nanyang Technological University, Singapore
- B.E. Students 📖 **Yuxiao Li**, 2024.10–Present, Nanyang Technological University, Singapore
- 📖 **Junyou Zhu**, 2022.09–2023.08, University of Chinese Academy of Sciences
- 📖 **Lihang Hu**, 2022.09–2023.08, University of Chinese Academy of Sciences

Student Mentoring and Co-Supervision (continued)

- **Dailing Zhang**, 2022.09–2023.08, Southeast University
- **Xuchen Li**, 2023.04–2024.07, Beijing University of Posts and Telecommunications
- **Le Ying Tan**, 2024.09–2025.05, Nanyang Technological University, Singapore
- **Zi Ye**, 2024.09–2025.07, University of Science and Technology Beijing
- **Jinlin Ma**, 2024.10–2025.07, Nanyang Technological University, Singapore
- **Yihan Meng**, 2024.12–2025.07, University of Science and Technology Beijing
- **Yihui Jiang**, 2025.01–2025.05, University of Science and Technology Beijing
- **Shunya Hirashima**, 2025.04–2025.07, Nanyang Technological University, Singapore
- **Anastasiia Bohachenko**, 2025.07–2025.09, Global Connect Fellow, Nanyang Technological University, Singapore

References

Prof. Kaiqi Huang

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Prof. Choli Wang

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