Yuhang Chen

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RESEARCH INTEREST

Reliable and Generalizable Foundation Models for Scientific and Cross-Domain Intelligence
Topic: Trustworthy AI, Embodied AI, AI4Science, Foundation Models, LLM Security

- Building robust large language models with reliability under hardware faults and adversarial conditions.
- Developing embodied agents that operate effectively across simulation and real-world environments.
- Advancing efficient and generalizable modeling for scientific discovery and cross-domain reasoning.

EDUCATION

University of North Carolina at Chapel Hill, Chapel Hill, NC, USA — Aug 2025 – Present
- Ph.D. in Computer Science
  - Advisor: Prof. Tianlong Chen

Wuhan University, Wuhan, China — Sep 2021 – Jun 2025
- Bachelor of Engineering in Computer Science
  - GPA 3.75 out of 4.0, Average Score 88.78 out of 100
  - Advisor: Prof. Mang Ye

PUBLICATIONS
(*: Equal contribution)

CONFERENCES

Fair Federated Learning under Domain Skew with Local Consistency and Domain Diversity
Yuhang Chen*, Wenke Huang*, Mang Ye
CVPR 2024

EQA-RM: A Generative Embodied Reward Model with Test-time Scaling
Yuhang Chen, Zhen Tan, Tianlong Chen
*EMNLP 2025, **Oral***

IndustryEQA: Pushing the Frontiers of Embodied Question Answering in Industrial Scenarios
Yifan Li*, **Yuhang Chen***, Anh Dao*, Lichi Li, Zhongyi Cai, Zhen Tan, Tianlong Chen, Yu Kong
NeurIPS 2025, D&B Track

Bit-Flip Error Resilience in LLMs: A Comprehensive Analysis and Defense Framework
Yuhang Chen, Zhen Tan, Ajay Jaiswal, Huaizhi Qu, Xinyu Zhao, Qi Lin, Yu Cheng, Andrew Kwong, Zhichao Cao, Tianlong Chen
EMNLP 2025

Spatial Coordinates as a Cell Language: A Multi-Sentence Framework for Imaging Mass Cytometry Analysis
Chi Jane Chen*, **Yuhang Chen***, Sukwon Yun*, Natalie Stanley, Tianlong Chen
ACL 2025 Findings

CellDuality: Unlocking Biological Reasoning in LLMs with Self-Supervised RLVR
Yuhang Chen, Zhen Tan, Ruichen Zhang, Mufan Qiu, Tianlong Chen
ICLR 2026

JOURNALS

Towards Generalization Fairness in Federated Learning
Mang Ye, **Yuhang Chen**, Wenke Huang, Hui Cai, Laizhong Cui
IEEE Transactions on Mobile Computing

IN SUBMISSION/ PREPARING
(*: Equal contribution)

JOURNALS

Speak, Plan, Harvest: An LLM Agent for General Planning in Agriculture via Transfer Learning
Mohan Zhang*, Xingjian Li*, **Yuhang Chen***, Weilong He*, Zhen Tan*, Zhenghua Zhang*, Jinhao Duan, Chris Reberg-Horton, Charles Fleming, Ron Alterovitz, Lirong Xiang, Tianlong Chen
➤ This work introduces an LLM agent that translates natural language instructions into transferable, multi-robot action plans and deploys them robustly across diverse agricultural environments, supporting human AI robot collaboration in real field conditions.
Under review

CONFERENCES

GDDR: Greatly Disturbing DRAM Rows — Cross-Component Rowhammer Attacks from Modern GPUs
Yichang Hu, Noah Brown, **Yuhang Chen**, Joshua Bakita, Tianlong Chen, Daniel Genkin, Andrew Kwong
Under review, S&P 2026

RESEARCH EXPERIENCES

UNITES Lab, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA Jul 2024 – Jun 2025
- Research Intern, working on foundation model safety, robustness, and embodied AI.
  - Advisor: Prof. Tianlong Chen

MARS Group, Wuhan University, Wuhan, China Jun 2023 – Jun 2025
- Research Assistant, focusing on federated learning and fairness in machine learning.
  - Advisor: Prof. Mang Ye

AWARDS & HONORS

- Overseas Exchange and Study Fund, Wuhan University Nov 2024
- Lei Jun Computer Innovation and Development Fund, Wuhan University Jun 2024
- Excellent Student, Wuhan University Sep 2023
- Third Class Scholarship, Wuhan University Sep 2023
- National Third Prize, China Collegiate Computing Contest Group Programming Tournament Mar 2023
- Bronze Medal, Hubei Province Collegiate Programming Contest Mar 2022

TEACHING EXPERIENCE

Teaching Assistant, COMP 560: Artificial Intelligence, UNC Chapel Hill Spring 2026
- Supported advanced undergraduate level course covering search methods, constraint satisfaction, probabilistic graphical models, inference, neural networks, reinforcement learning, and AI ethics.

Teaching Assistant, COMP 790-150: Efficient Deep Learning, UNC Chapel Hill Fall 2025
- Supported graduate-level special topics course covering pruning, sparsity, quantization, knowledge distillation, mixture-of-experts, distributed training, and efficient LLMs.

SKILLS

Technical Skills
- Python, C++, C, Java, CUDA; LaTeX; Pytorch.

Development Tools
- Linux, Windows; Git, Bash; AWS; VS Code

ACADEMIC SERVICE

Reviewer or PC Member of Conferences and Journals
- Conferences: CVPR, ICCV, ICLR... (2024–2025)
- Journals: IEEE TMC, IEEE TNNLS