

# Minghui Chen

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Google Scholar

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## Research Scientist

Columbia Business School

Decision, Risk, and Operations Division

## Research Profile

I study **adaptive and reliable AI**, with a focus on **foundation models and LLM agents** for sequential decision-making. My current research with [Prof. Hongseok Namkoong](#) spans continual, meta, and reinforcement learning, and applications in clinical settings.

**Research interests:** LLM agents; continual and reinforcement learning; learning under distribution shift; federated learning; AI for healthcare.

## Research Experience

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|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Oct 2025–Present  | <b>Columbia Business School, United States</b><br>Research Scientist<br>Decision, Risk, and Operations Division; working with Prof. Hongseok Namkoong.<br>Sequential decision-making with foundation models.<br>Continual, meta, and reinforcement learning. |
| Jul 2024–Oct 2025 | <b>Nanyang Technological University, Singapore</b><br>Research Associate<br>Working with Prof. Xiaoxiao Li and Prof. Han Yu.<br>Federated learning and LLM multi-agent systems, with applications in healthcare.                                             |
| Sep 2023–Jul 2024 | <b>Vector Institute, Canada</b><br>Research Associate<br>Working with Prof. Xiaoxiao Li on federated learning with foundation models.                                                                                                                        |
| Sep 2022–Jul 2024 | <b>University of British Columbia, Canada</b><br>Research Associate<br>Working with Prof. Xiaoxiao Li and Prof. Zehua Wang.<br>Federated and decentralized learning, trustworthy deep learning, and medical imaging.                                         |

## Education

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|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2019–2022 | <b>M.Sc. in Computer Science</b><br>Southern University of Science and Technology, China<br>Thesis: <i>Learning Corruption Invariant Representation in Computer Vision</i> . |
| 2014–2018 | <b>B.Sc. in Software Engineering</b><br>Sun Yat-sen University, China<br>Thesis: <i>Semi-supervised Text Classification based on Generative Model</i> .                      |

## Publications

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[Google Scholar](#) | [Online publication list](#)

### Peer-reviewed Publications

- 1 **Textual Equilibrium Propagation for Deep Compound AI Systems**  
**Minghui Chen**, Wenlong Deng, James Zou, Han Yu, Xiaoxiao Li  
[ICLR 2026](#) | [Paper](#) | [Code](#)
- 2 **For-Value: Efficient Forward-Only Data Valuation for finetuning LLMs and VLMs**  
Wenlong Deng, Qi Zeng, Jiaming Zhang, **Minghui Chen**, Zixin Ding, Christos Thrampoulidis, Boying Gong, Xiaoxiao Li  
[ACL 2026](#) | [Paper](#) | [Code](#)
- 3 **Forgettable Federated Linear Learning with Certified Data Unlearning**  
Ruinan Jin, **Minghui Chen**, Qiong Zhang, Xiaoxiao Li  
[IEEE TNNLS](#) | [Paper](#) | [Code](#)  
[FL@FM Workshop, The Web Conference 2024 \(Best Paper Award\)](#) | [Workshop paper](#)
- 4 **Can Textual Gradient Work in Federated Learning?**  
**Minghui Chen**, Ruinan Jin, Wenlong Deng, Yuanyuan Chen, Zhi Huang, Han Yu, Xiaoxiao Li  
[ICLR 2025](#) | [Paper](#) | [Code](#)
- 5 **DARE the Extreme: Revisiting Delta-Parameter Pruning For Fine-Tuned Models**  
Wenlong Deng, Yize Zhao, Vala Vakilian, **Minghui Chen**, Xiaoxiao Li, Christos Thrampoulidis  
[ICLR 2025 \(Spotlight\)](#) | [Paper](#) | [Code](#)
- 6 **Local Superior Soups: A Catalyst for Model Merging in Cross-Silo Federated Learning**  
**Minghui Chen**, Meirui Jiang, Xin Zhang, Qi Dou, Zehua Wang, Xiaoxiao Li  
[NeurIPS 2024](#) | [Paper](#) | [Code](#)
- 7 **Debiased Noise Editing on Foundation Models for Fair Medical Image Classification**  
Ruinan Jin, Wenlong Deng, **Minghui Chen**, Xiaoxiao Li  
[MICCAI 2024](#) | [Paper](#) | [Code](#)
- 8 **FedSoup: Improving Generalization and Personalization in Federated Learning via Selective Model Interpolation**  
**Minghui Chen**, Meirui Jiang, Qi Dou, Zehua Wang, Xiaoxiao Li  
[MICCAI 2023](#) | [Paper](#) | [Code](#)
- 9 **VITA: A Multi-Source Vicinal Transfer Augmentation Method for Out-of-Distribution Generalization**  
**Minghui Chen**, Cheng Wen, Feng Zheng, Fengxiang He, Ling Shao  
[AAAI 2022](#) | [Paper](#) | [Code](#)
- 10 **Benchmarks for Corruption Invariant Person Re-Identification**  
**Minghui Chen**<sup>\*</sup>, Zhiqiang Wang<sup>\*</sup>, Feng Zheng  
[NeurIPS 2021](#) | [Paper](#) | [Code](#)

### Preprints

- 11 **LatentGym: A Testbed For Cross-Task Experiential Learning With Controllable Latent Structure**  
Daksh Mittal, Tommaso Castellani, Thomson Yen, Naimeng Ye, Fangyu Wu, **Minghui Chen**, Tiffany Cai, Emmanouil Koukoumidis, William Zeng, Hongseok Namkoong  
[arXiv preprint 2026](#) | [Paper](#) | [Code](#)
- 12 **A Closer Look at Personalized Fine-Tuning in Heterogeneous Federated Learning**  
**Minghui Chen**<sup>\*</sup>, Hrad Ghoukasian<sup>\*</sup>, Ruinan Jin<sup>\*</sup>, Zehua Wang, Sai Praneeth Karimireddy, Xiaoxiao Li  
[arXiv preprint 2025](#) | [Paper](#) | [Code](#)

## Academic Service

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|--------------|---------------------------------------------------------------------------------------------------------------------------------------|
| 2027         | <b>Area Chair</b><br>International Conference on Learning Representations (ICLR 2027).                                                |
| 2022–Present | <b>Conference Reviewer</b><br>NeurIPS, ICLR, ICML, AISTATS, CVPR, ICCV, ECCV, CoLLAs, and MIDL.                                       |
| 2023–Present | <b>Journal Reviewer</b><br>IEEE TNNLS, TMI, TBIOM, and TNSE; Medical Image Analysis (MedIA);<br>IEEE Signal Processing Letters (SPL). |

## Honors and Awards

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|-----------|---------------------------------------------------------------------|
| 2024      | <b>Best Paper Award</b><br>FL@FM Workshop, The Web Conference 2024. |
| 2022–2024 | <b>UBC Blockchain Graduate Pathway Fellowship</b>                   |
| 2022      | <b>AAAI Student Scholarship</b>                                     |
| 2017      | <b>Second Prize Scholarship</b><br>Top 10%.                         |

## Earlier Research and Industry Experience

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|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Oct 2021–Jan 2022 | <b>Tencent Medical Jarvis Lab, China</b><br>Research Intern<br>Brain image synthesis, pancreatic cancer recognition, and X-ray image retrieval. |
| Jul 2017–Sep 2017 | <b>Tencent Technology and Engineering Group, China</b><br>Algorithm Intern<br>Analysis of app-store reviews.                                    |

## Teaching

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|-------------------|---------------------------|
| Sep 2020–Jan 2021 | <b>Teaching Assistant</b> |
| Sep 2019–Jan 2020 | Computer Vision.          |

## Talks

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| 2021 | <b>Vision and Learning Seminar (Valse) Webinar</b><br>Paper presentation: Benchmarks for Corruption Invariant Person Re-identification. |
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