

Associate Professor of Logic
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ACADEMIC POSITIONS

- **Institute of Philosophy, Chinese Academy of Sciences &
Department of Philosophy, University of Chinese Academy of Sciences**
Associate Professor Beijing, China
Assistant Professor Dec. 2023 - present
Nov. 2021 - Dec. 2023

EDUCATION

- **Ph.D. in Logic (jointly awarded)** Sep. 2017 - Oct. 2021
Department of Philosophy, Tsinghua University Beijing, China
Institute for Logic, Language and Computation, University of Amsterdam Amsterdam, The Netherlands
 - Supervisors: Prof. Fenrong Liu, Prof. Johan van Benthem, Dr. Alexandru Baltag
 - Dissertation: Formal Threads in the Social Fabric: Studies in the Logical Dynamics of Multi-Agent Interaction
- **Master of Logic** Sep. 2013 - July 2017
Department of Philosophy, Peking University Beijing, China
 - Supervisor: Prof. Yanjing Wang
 - Thesis: Modal Mereology (in Chinese)
- **Bachelor of Philosophy** Sep. 2009 - July 2013
Department of Philosophy, Zhengzhou University Zhengzhou, China

RESEARCH INTERESTS

- **Logic**
Modal Logic, Dynamic Logic, Epistemic Logic
- **Applications of Logic**
Logic in Philosophy, Games, Social Networks, Theoretical Computer Science, and AI
- **Current research directions:**
 - Logics for graph games
 - Logics for dependence and causality
 - Modal approaches towards mereology
 - New foundations for epistemic logic and uncertainty reasoning
 - Monotonicity reasoning

(* indicates corresponding author)

• In Journals:

1. Yixun Zhong, **Dazhu Li***. Preference Aggregation in Hierarchical Voting Models and Analysis of Its Normative Properties. *Studies in Logic*, Accepted, 2026. (In Chinese)
2. Qian Chen, **Dazhu Li***. On the logic of the hide and seek game. *Journal of Logic, Language and Information*, **35**: 135-159, 2026.
3. Katsuhiko Sano, Fenrong Liu, **Dazhu Li***. Hybrid logic of the hide and seek game. *Studia Logica*, **114** (2): 349-381, 2026.
4. Yaxin Tu, Sujata Ghosh, Fenrong Liu, **Dazhu Li***. A modal approach towards substitutions. *Annals of Pure and Applied Logic*, **177**(7): 103742, 2026.
5. Alexandru Baltag, Johan van Benthem, **Dazhu Li***. Temporal dependencies in dynamical systems, a modal-style exploration. *Journal of Logic, Language and Information*, **35**: 381-420, 2026.
6. Penghao Du, Fenrong Liu, **Dazhu Li***. Modal logics for the poison game: axiomatization and undecidability. *Review of Analytic Philosophy*, **5**(1), 43-77, 2025.
7. **Dazhu Li**, Sujata Ghosh, Fenrong Liu*. Reasoning under uncertainty in the game of Cops and Robbers. *Synthese*, **206**, 101, 2025.
8. Rafał Gruszczyński, **Dazhu Li***. The sum relation as a primitive concept of mereology. *Studia Logica*, **113** (3): 601-617, 2025.
9. **Dazhu Li**, Sujata Ghosh*, Fenrong Liu, Yaxin Tu. A simple logic of the hide and seek game. *Studia Logica* **111** (5): 821-853, 2023. (An extension of the WoLLIC 2021 paper)
10. **Dazhu Li**, Yanjing Wang*. Mereological bimodal logics. *The Review of Symbolic Logic* **15** (4): 823-858, 2022.
11. Fenrong Liu, **Dazhu Li***. Ten-year history of social network logics in China. *Asian Studies* **10** (2): 121-146, 2022.
12. Alexandru Baltag, **Dazhu Li***, Mina Young Pedersen. A modal logic for supervised learning. *Journal of Logic, Language and Information* **31** (2): 213-234, 2022. (An extension of the LORI 2019 paper)
13. **Dazhu Li***. Losing connection: the modal logic of definable link deletion. *Journal of Logic and Computation* **30** (3): 715-743, 2020.

• In Conference Proceedings:

14. **Dazhu Li***, Sujata Ghosh. Cops only need factual knowledge to catch robbers. In R. Wassermann, M.-L. Mugnier and F. Baader, eds., *Proceedings of the 23rd International Conference on Principles of Knowledge Representation and Reasoning (KR 2026)*, pp. 452-451, IJCAI Organization, 2026.
15. **Dazhu Li**, Katsuhiko Sano*. Finite axiomatization for the hybrid product logics with diagonal constant. In *Proceedings of AWPL 2025*, accepted.
16. Qian Chen, **Dazhu Li***. Logic of the hide and seek game: characterization, axiomatization, decidability. In N. Gierasimczuk and F. R. Velázquez-Quesada, eds., *Proceedings of DaLi 2023*, vol. 14401 of Lecture Notes in Computer Science, pp. 20-34, Springer, 2024.
17. **Dazhu Li**, Sujata Ghosh*, Fenrong Liu, Yaxin Tu. On the subtle nature of a simple logic of the hide and seek game. In A. Silva, R. Wassermann and R. de Queiroz, eds., *Logic, Language, Information, and Computation (WoLLIC 2021)*, vol. 13038 of Lecture Notes in Computer Science, pp. 201-218, Springer, 2021.

18. Alexandru Baltag, **Dazhu Li***, Mina Young Pedersen. On the right path: a modal logic for supervised learning. In P. Blackburn, E. Lorini and M. Guo, eds., *Proceedings of LORI 2019*, vol. 11813 of Lecture Notes in Computer Science, pp. 1-14, Springer, 2019.

• **Book Chapters:**

19. **Dazhu Li***. A modal logic of definable link deletion. In J. van Benthem and F. Liu, eds., *Graph Games and Logic Design: Recent Developments and Further Directions*, pp. 75-101, Springer, 2026.
20. Qian Chen, **Dazhu Li***, Yaxin Tu, Sujata Ghosh, Fenrong Liu. A modal for the hide and seek game. In J. van Benthem and F. Liu, eds., *Graph Games and Logic Design: Recent Developments and Further Directions*, pp. 177-206, Springer, 2026.
21. **Dazhu Li**, Sujata Ghosh, Fenrong Liu*. Knowing is winning: An epistemic approach to the hide and seek game. In J. van Benthem and F. Liu, eds., *Graph Games and Logic Design: Recent Developments and Further Directions*, pp. 233-250, Springer, 2026.
22. Yaxin Tu*, Sujata Ghosh, Fenrong Liu, **Dazhu Li**. Modelling strategies in hide and seek game: A substitution approach. In J. van Benthem and F. Liu, eds., *Graph Games and Logic Design: Recent Developments and Further Directions*, pp. 279-303, Springer, 2026.
23. Katsuhiko Sano, Fenrong Liu, **Dazhu Li***. The hide and seek game: Perspectives from hybrid logic. In J. van Benthem and F. Liu, eds., *Graph Games and Logic Design: Recent Developments and Further Directions*, pp. 207-231, Springer, 2026.

• **PhD Dissertation:**

24. **Dazhu Li**. *Formal Threads in the Social Fabric: Studies in the Logical Dynamics of Multi-Agent Interaction*. PhD thesis, Tsinghua University and University of Amsterdam, 2021.
(<https://eprints.illc.uva.nl/id/eprint/2199/>)

RESEARCH UNDER SUBMISSION AND IN PROGRESS

• **In Progress:**

1. Modal Logic (in Chinese)
Joint work with Johan van Benthem and Xinwen Liu
2. Decidability of the hybrid logic of hide and seek games
Joint work with Fenrong Liu and Katsuhiko Sano
3. Hybrid logics for product logics with diagonal constant
Joint work with Katsuhiko Sano
4. Epistemic logic of hide and seek games with simultaneous movements
Joint work with Sujata Ghosh
5. Tableau for the logic of hide and seek game
Joint work with Carlos Areces, Valentin Cassano, and Qian Chen
6. Topological approach to mereological sum and fusion
Joint work with Rafał Gruszczyński
7. Abstract mereology
Joint work with Rafał Gruszczyński

1. Cops only need factual knowledge to catch robber. The 23rd International Conference on Principles of Knowledge Representation and Reasoning (KR 2026). Lisbon, Portugal. July 20-23, 2026.
2. Modal logics for substitution. Tsinghua Logic Colloquium (Summer Meeting: Reasoning, Modality and Non-classical Logic), July 14, 2026.
3. Modal approaches towards mereology. Workshop on Mereology. Shandong University, June 22, 2026.
4. What knowledge matters in order to meet? Workshop on Advances in Social Network Logic. Tsinghua, June 3-4, 2026.
5. Cops and robber: only factual knowledge matters. Recent Trends in Logic and Game Theory 2026. Chennai, India. March 16-18, 2026. (online)
6. Logics for the hide and seek game. The 18th Tsinghua Logic Colloquium (Advances in Logic), Beijing, China, January 12, 2026.
7. Hybrid product logic with diagonal constant. 2025 Academic Frontiers Forum of Beijing City Federation of Social Science Circles – Beijing Association of Logic Session. Beijing, Nov 15, 2025
8. Graph games and logic design. Computational Logic and Applications Winter School. Shantou, October 25, 2025.
9. Meet vs avoid: logical approaches to the hide and seek game. Recent Trends in Logic and Game Theory 2025. Chennai, India. February 11-12, 2025. (online)
10. Graph game logic: some recent developments. International Workshop on Logic and Games, Taiyuan, China, October 19, 2024.
11. Logics of the hide and seek game & product logics with diagonal constant: A hybrid approach. The 12th Tsinghua Logic Colloquium (Summer Meeting: Advances in Logic), Beijing, China, August 17, 2024.
12. Mereology based on the sum relation. The 3rd international workshop on Logic for Multi-Agent Systems, Zhejiang University, Zhejiang, China, June 22-23, 2024.
13. Modal logics for mereology. Interdisciplinary Seminar on Logic, Cognition and Mathematical Philosophy, Sanya, China, April 29 - May 3, 2024.
14. A modal approach towards substitutions. SWU-UiB Logic Workshop. Chongqing, China. March 27-28, 2024.
15. Tableau calculi for the hybrid logic of the hide and seek game and further extensions. Sapporo One-day Workshop on Hybrid Logic and Proof Theory. Sapporo, Japan. March 7, 2024.
16. Action-information interplay in cops and robbers games. Bridges between Logic, Ethics and Social Sciences (BLESS). Toruń, Poland. November 22-25, 2023. (online)
17. A logical approach to learning process. Logic Meets Norms. Tsinghua University, Beijing, China. May 29, 2023.
18. Logical approaches to the Cops and Robber game. Chinese Annual Conference on Mathematical Logic. China. November 25-27, 2022.
19. Hybrid logic of the hide and seek game. Sichuan University. November 24, 2022.
20. A logical analysis of dynamic dependence. Tsing Ch'a Sessions. Tsinghua University, Beijing, China. May 26, 2022.

21. Mereological bimodal logics. Beijing Normal University, Beijing China. March 25, 2022.
22. Undecidability of the logic of hide and seek games. Indian Statistical Institute. June 16, 2021. (online)
23. A modal logic for supervised learning. LIRa Seminar. University of Amsterdam, Amsterdam, The Netherlands. January 23, 2020.
24. Dynamic epistemic logics in social networks. Logic Salon. Tsinghua University, Beijing, China. October 23, 2019.
25. Losing connection: modal logics of definable link deletion. The 13th Conference on Logic and the Foundations of Game and Decision Theory (LOFT 2018). Milan, Italy. July 16-18, 2018.
26. Modal mereology. Non-classical Modal and Predicate Logics: The 9th International Workshop on Logic and Cognition. Guangzhou, China. December 4-8, 2017.

PROJECTS

• As PI:

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|---|-----------------------|
| 1. Study on Modal Mereology
Social Science Foundation of Beijing, China [24ZXC007] | Nov. 2024 - Nov. 2027 |
| 2. Neighborhood Semantic Approach towards Mereology
“Excellence Initiative - Research University” Program,
Nicolaus Copernicus University in Toruń [16/2023/Mobility] | Aug. 2023 - Oct. 2023 |
| 3. Logics for Strategy, Dependence and Stability in Multi-Agent Interaction
National Social Science Foundation of China [22CZX063] | Sep. 2022 - June 2026 |

• As Participant:

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| 1. Study on logics of uncertainty reasoning and their applications
PI: Beihai Zhou, Shanxi University
Major Program of the National Social Science Foundation of China [24&ZD227] | Oct 2024 - Aug, 2029 |
| 2. A Study of Logic of Human Reasoning based on Image Schema Theory
PI: Chao Xu, Shanxi University
National Social Science Foundation of China [23BZX126] | Sep. 2023 - June 2027 |
| 3. Study on the Reasoning and Argument Patterns in Hongming Collection
PI: Liying Zhang, University of Chinese Academy of Sciences
National Social Science Foundation of China [20BZX103] | June 2022 - June 2026 |
| 4. Logics of Information Flow in Social Networks
PI: Fenrong Liu, Tsinghua University
Major Program of the National Social Science Foundation of China [17ZDA026] | Dec. 2017 - Jan. 2022 |

TEACHING

• University of Chinese Academy of Sciences

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|--------------------------------|---------------------------------------|
| ◦ Philosophical Logic | Spring 2026, Spring 2025 |
| ◦ Topics in Mathematical Logic | Fall 2026, Fall 2025, Fall 2024 |
| ◦ Introduction to Modern Logic | Spring 2026, Spring 2025, Spring 2024 |

- Logic and Critical Thinking
- University Writing

Spring 2022, Spring 2023
Spring 2023, Spring 2024

- **European Summer School in Logic, Language and Information (37th, 2026)**

- Reasoning in graph games: A modal logic study (with Sujata Ghosh)
Course website: <https://sites.google.com/view/graphgamesesslli2026>

August 3-7, 2026, Prague

PROFESSIONAL EXPERIENCE

- **Served as Reviewer for:**

Logic and Logical Philosophy (2026), International Conference on Principles and Practice of Multi-Agent Systems (PRIMA 2026), Advance in Modal Logic (2026), Erkenntnis (2022, 2024), Studies in Logic (2022, 2026), Synthese (2022, 2026), Journal of Logic and Computation (2025, 2026), Journal of Logic, Language and Information (2025, 2026), International Conference on Logic, Rationality and Interaction (LORI 2021,2023,2025), National Conference on Modern Logic (2022, 2026), Theoretical Aspects of Rationality & Knowledge (TARK 2023,2025), Pacific Rim International Conference on Artificial Intelligence (PRICAI 2023, 2025), Asian Workshop on Philosophical Logic (AWPL 2023, 2024, 2025), Chinese Philosophical Review (2024), Workshop on Logic, Language, Information and Computation (WoLLIC 2024), ESSLLI Student Session (2024, 2025), International Workshop on Non-Monotonic Reasoning (NMR 2024), Australasian Journal of Logic (2026)

- **PC Member of:**

National Conference on Modern Logic (2022, 2026), Pacific Rim International Conference on Artificial Intelligence (PRICAI 2023, 2025), International Conference on Principles and Practice of Multi-Agent Systems (PRIMA 2026), Asian Workshop on Philosophical Logic (AWPL 2024, 2025, 2026), ESSLLI Student Session (2024, 2025), International Conference on Logic, Rationality and Interaction (LORI 2025, 2027), Indian Conference on Logic and its Applications (ICLA 2027)