

RESEARCH INTERESTS

Main focus: The foundation of modal logic and its applications in philosophy, AI, TCS, math, and social sciences.

In particular: epistemic logic, first-order modal logic, non-normal modal logic, polyadic modal logic, and deontic logic.

Other interests: non-classical logics, formal semantics, formal epistemology, formal verification.

Outreaching interest: academic ethics

SELECTED CONTRIBUTIONS (2011-)

- Systematic study of epistemic logic of know-wh (*know whether/what /how /why who...*). E.g., [16,20,13,12,9,8]
- Introducing the know-how semantics of intuitionistic and intermediate logics. [6,33]
- A general method for axiomatizing Dynamic Epistemic Logic without using reduction axioms. [22,54]
- Introducing the *bundled fragments* of First-order Modal Logic. [43,3,42]
- Developing know-how based logical method for AI planning. [36,11]
- Introducing *de re* updates and corresponding techniques. [35]
- Introducing modal logical mereology. [7]
- Developing the model theory of weakly aggregative logics. [4,5]
- Axiomatizing modal and tense logics over various kinds of lattices. [31]
- A bundled semantics for free choice permission in deontic logic. [29]

EDUCATION

- **PhD in Logic** Amsterdam, NL
Centrum Wiskunde & Informatica (CWI) July 2006 - Sept 2010
 - Dissertation: *Epistemic Modelling and Protocol Dynamics*
 - Supervisor: Prof. Jan van Eijck
 - The diploma was issued by **University of Amsterdam (UvA)**
- **MSc in Logic (Cum Laude)** Amsterdam, NL
Institute for Logic language and Computation (ILLC), University of Amsterdam Sept 2004 - Mar 2006
 - Thesis: *Indexed Semantics and Its Application in Modelling: Interactive Unawareness*
 - Supervisors: Prof. Frank Veltman and Dr. Maricarmen Martinez
- **BA in Philosophy, BA in Economics,** Beijing, CN
Department of Philosophy, Peking University Sept 2000 - Jun 2004

ACADEMIC POSITIONS

- **Department of Philosophy, Peking University**

Full Professor

Vice-chair

Associate Professor (tenured)

Associate Professor

Assistant Professor

Beijing, CN

Aug 2022 - present

Aug 2018 - present

Aug 2018 - July 2022

Aug 2012 - July 2018

Sept 2010 - July 2012

PROFESSIONAL EXPERIENCE

- Member of:

Association of Symbolic Logic, Chinese Association of Logic, Western Returned Scholars Association, Chinese Mathematical Society

- Associate editor of:

Journal of Philosophical Logic (April 2022 –)

- Advisory Board Member of:

Master of Logic program at ILLC, Amsterdam

- Steering Committee Member of:

Logical Aspects of Multi-Agent Systems (LAMAS)

- PC member of:

LORI2013/2015, TARK 2015, AAMAS2015, LOFT2016, IJCAI2016, KR2016, ICLA2017, WoLLIC2018, AiML2020, LORI2021, LAMAS+SR 2022,

- Served as external reviewer for:

AAMAS, CSL, LICS, KR, TARK, LORI, ESSLLI-StuS, ACM Transactions on Computational Logic, Journal of Applied Non-Classical Logics, Synthese, Studia Logica, Journal of Logic and Computation, The Review of Symbolic Logic, Artificial Intelligence, Journal of Logic, Language and Information, Journal of Philosophical Logic, Journal of Artificial Intelligence Research, Erkenntnis, Mathematical Reviews, Episteme

- International events organized

Logical Dynamics: New Trends and Interfaces, Peking University,

Oct. 9th 2011

Epistemic Logics in AI, Peking University,

Aug. 10th 2013

Delta Logic workshop IX, Peking University,

Sept. 8th, 2018

PKU Week of Mathematical Philosophy, Peking University,

June 20-27, 2019

PKU Mathematical Philosophy:

On the Occasion of the Centenary of Russell's Visit to Peking University, Peking University,

Sept.- Dec., 2020

Workshop on Decidable Fragments of FOML, FLoC,

July 31 2022

Learning, Causality, and Quantum Systems

July 3rd 2023

- National conference organized, as PC chair

National conference on modern logic 2015, Hebei University, 2015

National conference on modern logic 2016, Southwest University, 2016

- 24th World Congress of Philosophy, Beijing,

Aug. 2018

In charge of the scheduling of 1000 sessions and 5000⁺ talks

PROJECTS:

- **as PI:**

- Decidable fragments of first-order modal logic (SSFC grant 19BZX135)

- Beyond “knowing that”: non-standard epistemic logic (Top-notch Young Professionals program)

- Protocol-based logical dynamics (SSFC grant 11CZX054)
- Starting Grant of Returned Overseas Chinese Scholars

• **as participant:**

- *Multidisciplinary cognition studies* (Key Project of National Social Science Foundation of China 12&ZD119)
- *Logic based cognitive studies* (Key Project of National Social Science Foundation of China 11&ZD088)
- *Studies on logic and philosophy of mathematics* (MOE Project of Key Research Institute of Humanities and Social Sciences in Universities 12JJD720011)
- Action-sequence based studies on imperatives and deontic logic (SSFC grant 12CZX053)

TEACHING

Advanced modal logic	<i>Spring of 2011-present</i>
Epistemic logic	<i>Fall of 2015-present</i>
Introduction to Logic	<i>Spring of 2022-present</i>
Logic and Puzzles	<i>Fall of 2023-present</i>
Logical dynamics	<i>Fall of 2011-2014, 2018</i>
Logic in Math, Philosophy and CS	<i>Fall of 2016</i>
Language, Logic and Computation	<i>Fall of 2017</i>
Frontiers of Research of Modern Logic	<i>2010–2022</i>
Beyond Knowing That: Non-standard Epistemic Logics	<i>ESSLLI2015, NASSLLI2018</i>
Introduction to Bundled Modalities	<i>ESSLLI2024</i>

SUPERVISION

(Co) PhD supervisor for: Jie Fan, Yanjun Li, Jixin Liu, Yu Wei, Xun Wang, Xiaoyang Wang

In the Ph.D. defense committee of: Yanjun Li (University of Groningen), Malvin Gattinger (University of Amsterdam)

Master thesis supervised: Xi Chen, Tszyuen Lau, Chao Xu, Yingying Cheng, Dazhu Li, Xingchi Su, Jingzhi Fang, Mo Liu, Yiting Wang, Haoyu Wang, Kaiyang Lin, Bo Hong, Dekun Zeng, Bin Liu

Undergraduate thesis supervised: Tingxiang Zou, Shihao Xiong, Yifeng Ding, Tao Gu, Zhouhang Zhou, Xinyu Wang, Yunsong Wang, Cheng Liao, Yilun Wang, Wen Tang, Yuanzhe Yang, Zilu Wang, Yipu Li

HONOURS AND AWARDS

2nd Prize of Outstanding Research Award (Humanities and Social Sciences) of Chinese Universities, 2024

National Program for Support of Leading Scholars in Philosophy and Social Sciences, China, 2020

National Program for Support of Top-notch Young Professionals, China, 2015

INSA JRD-TATA Fellowship, India 2012

New Zealand Centre Visiting Research Fellowship, New Zealand, 2017

Beth Scholarship, The Netherlands 2004-2006

PUBLICATIONS

Including papers in *TARK* (8), *Advances in Modal Logic* (6), *Synthese* (7), *Review of Symbolic Logic* (3), *Artificial Intelligence* (3), *Annals of Pure and Applied Logic* (2), *IJCAI* (3), *LORI*(6), *ICLA*(4), *WoLLIC* (2):

Books

1. Yanjing Wang: Chinese translation of *Saints and Scamps: Ethics in Academia* by Steven Cahn, Peking University Press 2021

In refereed journals, books, and encyclopedias

2. Rendsvig, Rasmus, John Symons, and Yanjing Wang "Epistemic Logic", The Stanford Encyclopedia of Philosophy (Winter 2023 Edition), Edward N. Zalta & Uri Nodelman (eds.), 2023
3. Mo Liu, Anantha Padmanabha, R. Ramanujam and Yanjing Wang: Are Bundles Good Deals for First-order Modal Logic. *Information and Computation* 2023 (Largely extended journal version of the MFCS 2022 conference paper)
4. Yifeng Ding, Jixin Liu, Yanjing Wang: Someone knows that local reasoning on hypergraphs is a weakly aggregative modal logic. *Synthese* 201 (2):1-27, 2023 (Largely extended journal version of the LORI2021 conference paper)
5. Jixin Liu, Yifeng Ding, Yanjing Wang: Model Theoretical Aspects of Weakly Aggregative Modal Logic. *Journal of Logic, Language and Information* 31:261–286, 2022 (Largely extended journal version of the LORI2019 conference paper)
6. Haoyu Wang, Yanjing Wang, Yunsong Wang: Inquisitive Logic as an Epistemic Logic of Knowing How. *Annals of Pure and Applied Logic* 173 (10):103145
7. Dazhu Li, Yanjing Wang: Mereological Bimodal Logics *The Review of Symbolic Logic* 173 (10):103145
8. Raul Fervari, Fernando R. Velázquez-Quesada, Yanjing Wang: Bisimulations for Knowing How Logics. *The Review of Symbolic Logic* 15(2): 450-486, 2022
9. Yanjing Wang, Yu Wei, Jeremy Seligman: Quantifier-free Epistemic Term-modal Logic with Assignment Operator, *Annals of Pure and Applied Logic*:173(3), 103071 (Largely extended journal version of the AiML2018 conference paper)
10. Yanjun Li, Yanjing Wang: Neighbourhood Semantics for Logic of Knowing How. *Synthese* 199: 8611–8639
11. Yanjun Li, Yanjing Wang: Planning-based knowing how: a unified approach, *Artificial Intelligence* 296:103487, 2021
12. Chao Xu, Yanjing Wang, and Thomas Studer: A logic of knowing why, *Synthese* 198: 1259–1285, 2021.
13. Yanjing Wang: A logic of goal-directed knowing how, *Synthese* 195 (10): 4419-4439. 2018. (Extended journal version of the LORI15 conference paper)
14. Yanjun Li, Barteld Kooi and Yanjing Wang: A Dynamic Epistemic Framework for Reasoning about Conformant Probabilistic Plans, in *Artificial Intelligence* 268: 54-84.
15. Thomas Agotnes, Hans van Ditmarsch, Yanjing Wang: True lies. in *Synthese* 195 (10): 4581-4615. 2018.
16. Yanjing Wang: Beyond knowing that: a new generation of epistemic logics, in *Jaakko Hintikka on knowledge and game theoretical semantics*, 499-533, (2018) Springer
17. Yanjun Li, Quan Yu, Yanjing Wang: More for free: A dynamic epistemic framework for conformant planning. *Journal of Logic and Computation* 27(8):2383-2410. (largely extended version of the TARK 2015 conference paper)
18. Tszyuen Lau and Yanjing Wang: Knowing your ability, in *The Philosophical Forum* 47(3-4):415-424 (2016), Wiley-Blackwell
19. Kai Li and Yanjing Wang: From rules to runs - a dynamic epistemic take of imperfect information take. *Studies in Logic* 8(4):74-107 (2015)
20. Jie Fan, Yanjing Wang and Hans van Ditmarsch: Contingency and knowing whether, in *Review of Symbolic Logic* 8(1):75-107 (2015), Cambridge University Press
21. Hans van Ditmarsch, Sujata Ghosh, Rineke Verbrugge, Yanjing Wang: Hidden protocols: Modifying our expectations in an evolving world. *Artificial Intelligence* 208: 18-40 (2014), Elsevier (largely extended version of the TARK 2011 conference paper)

22. Yanjing Wang and Qinxiang Cao, On axiomatizations of Public Announcement Logic. *Synthese* 190(1S): 103-134 (2013), Springer (largely extended version of the LORI 2011 conference paper)
23. Yanjing Wang, Review of *Logical Dynamics: Information and Interaction*, *Studia Logica* 102(3): 647-654, (2014), Springer
24. Fenrong Liu and Yanjing Wang, Reasoning about agent types and the hardest logic puzzle ever. *Minds and Machines* 23(1):123-161 (2012), Springer
25. Jan van Eijck, Floor Sietsma, Yanjing Wang: Composing models. *Journal of Applied Non-Classical Logics* 21(3-4): 397-425 (2011), Taylor & Francis
26. Hans van Ditmarsch, Jan van Eijck, Floor Sietsma, Yanjing Wang, On the Logic of Lying, *Games, Actions and Social Software*, pp. 41-72 (2012), Springer
27. Francien Dechesne, Yanjing Wang: To know or not to know: epistemic approaches to security protocol verification. *Synthese* 177(S1): 51-76 (2010), Springer
28. Francien Dechesne, Jan van Eijck, Wouter Teepe, Yanjing Wang: What is protocol analysis? and Protocol Analysis and Dynamic Epistemic Logic, pp. 135-146 and pp. 147-162 in: *Discourses on Social Software*, Jan van Eijck and Rineke Verbrugge (eds), Vol. 5 of Texts in Logic and Games (2009), University of Amsterdam Press

In refereed international conference proceedings

29. Zilu Wang and Yanjing Wang: Strong Permission Bundled: First Steps. In Proceedings of DEON 2023
30. Yipu Li and Yanjing Wang: Epistemic Syllogistic: First Steps. In Proceedings of TARK 2023
31. Xiaoyang Wang and Yanjing Wang: Tense Logics over Lattices, In Proceedings of WoLLIC 2022
32. Mo Liu, Anantha Padmanabha, R. Ramanujam and Yanjing Wang: Generalized Bundled Fragments of First-order Modal Logic, in Proceedings of MFCS 2022
33. Haoyu Wang, Yanjing Wang, Yunsong Wang: An Epistemic Interpretation of Tensor Disjunction. In Proceedings of Advances in Modal Logic 2022.
34. Yifeng Ding, JixinLiu, Yanjing Wang: Hypergraphs, local reasoning, and weakly aggregative modal logic. In Proceedings of LORI 2021: 153-167
35. Michael Cohen, Wen Tang, Yanjing Wang: De Re Updates. In Proceedings of TARK 2021: 103-117
36. Yanjun Li, Yanjing Wang: Knowing How to Plan. In Proceedings of TARK 2021: : 233-247
37. Xinyu Wang, Yanjing Wang: Knowledge-now and Knowledge-all. In Proceedings of LORI 2019: 399-412
38. Jixin Liu, Yanjing Wang, Yifeng Ding: Weakly Aggregative Modal Logic: Characterization and Interpolation. In Proceedings of LORI 2019: 153-167
39. Yanjun Li, Yanjing Wang: Multi-agent knowing how via multi-step plans: a dynamic epistemic planning based approach. In Proceedings of LORI 2019: 126-139
40. Malvin Gattinger, Yanjing Wang: How to Agree without Understanding Each Other: Public Announcement Logic with Boolean Definitions. In Proceedings of TARK 2019: 206-220
41. Yanjing Wang and Jeremy Seligman: When Names Are Not Commonly Known: Epistemic Logic with Assignments. in *Advances in Modal Logic* Vol. 12 (2018): 611-628, College Publications
42. Anantha Padmanabha, R. Ramanujam, Yanjing Wang: Bundled fragments of first order modal logic: (un)decidability in Proceedings of FSTTCS2018 LIPIcs 112: 43:1-43:20
43. Yanjing Wang: A new modal framework for epistemic logic. in Proceedings of TARK 2017: 493-512 EPTCS

44. Raul Fervari, Andreas Herzig, Yanjun Li, Yanjing Wang: Strategically knowing how. In *Proceedings of IJCAI 2017*:1031-1038, AAAI
45. Jan van Eijck, Malvin Gattinger, Yanjing Wang: Knowing Values and Public Inspection, in *Proceedings of ICLA 2017*: 77-90, Springer
46. Yanjun Li, Yanjing Wang: Achieving while maintaining: A logic of knowing how with intermediate constraints, in *Proceedings of ICLA 2017*:154-167, Springer
47. Tao Gu and Yanjing Wang: "Knowing value" logic as a normal modal logic, in *Advances in Modal Logic* Vol. 11: 362-381 (2016), College Publications
48. Yanjing Wang: A logic of knowing how, in *Proceedings of LORI2015*:392-405, Springer
49. Yanjing Wang and Jie Fan: Epistemic Informativeness, in *Proceedings of the Second Asian Workshop on Philosophical Logic*, Studia Logica Library, Springer
50. Quan Yu, Yanjun Li, Yanjing Wang: A Dynamic Epistemic Framework for Conformant Planning, in *Proceedings of TARK2015*: 249-259, EPTCS
51. Yanjing Wang: Representing Imperfect Information of Procedures with Hyper Models. in *Proceedings of ICLA 2015*: 218-231. Springer.
52. Yanjing Wang, Jie Fan: Conditionally knowing what, in *Advances in Modal Logic* Vol. 10: 569-587 (2014), College Publications
53. Jie Fan, Yanjing Wang and Hans van Ditmarsch: Almost necessary, in *Advances in Modal Logic* Vol. 10: 178-197 (2014), College Publications
54. Yanjing Wang, Guillaume Aucher: An Alternative Axiomatization of DEL and its Applications, in *Proceedings of IJCAI 2013*: 1139-1146. AAAI press.
55. Yanjing Wang, Jie Fan: Knowing that, Knowing what, and Public Communication: Public Announcement Logic with Kv Operators, in *Proceedings of IJCAI 2013*: 1147-1154. AAAI press.
56. Yanjing Wang and Yanjun Li, Not all those who wander are lost: dynamic epistemic reasoning in navigation, in *Advances in Modal Logic* Vol. 9, pp.559-580 (2012), S. Ghilardi and L. Moss eds., College publications
57. Yanjing Wang: Reasoning about Protocol Change and Knowledge. *ICLA 2011*: 189-203, Springer
58. Yanjing Wang: On Axiomatizations of PAL. *LORI 2011*: 314-327, Springer
59. Hans P. van Ditmarsch, Sujata Ghosh, Rineke Verbrugge, Yanjing Wang: Hidden protocols. *TARK 2011*: 65-74, ACM digital library
60. Yanjing Wang, Floor Sietsma, Jan van Eijck: Logic of information flow on communication channels. *AAMAS 2010*: 1447-1448, full version in *DALT 2010*: 130-147, Springer
61. Yanjing Wang, Lakshmanan Kuppusamy, Jan van Eijck: Verifying epistemic protocols under common knowledge. *TARK 2009*: 257-266, ACM Digital library
62. Francien Dechesne, Simona Orzan, Yanjing Wang: Refinement of Kripke Models for Dynamics. *ICTAC 2008*: 111-125, Springer
63. Taolue Chen, Jaco van de Pol, Yanjing Wang: PDL over Accelerated Labeled Transition Systems. *TASE 2008*: 193-200, IEEE computer society
64. Jan van Eijck, Yanjing Wang: Propositional Dynamic Logic as a Logic of Belief Revision. *WoLLIC 2008*: 136-148, Springer
65. Muhammad Torabi Dashti, Yanjing Wang: Risk Balance in Exchange Protocols. *ASIAN 2007*: 70-77, Springer
66. Francien Dechesne, Yanjing Wang: Dynamic Epistemic Verification of Security Protocols: framework and case study. In *Proc. Logic Rationality and Interaction (LORI 2007)*: pp.129-144 College Publications

Edited columns/volumes

67. Yanjing Wang: Beyond “knowing that”: nonstandard epistemic logics. *Studies in Logic* 9 (4) 2016
68. Yanjing Wang: Proceedings of the 2016 National Conference on Modern Logic, *Studies in Logic* 10 (2) 2017

RECENT INVITED TALKS (2019-)

Bimodal Neighborhood Logic @ Tsinghua University	Dec 28, 2023
A Road to Independent Researcher @ South China Normal University	Nov 19, 2023
Logical Diving with Bundles @ Sun Yat-sen University (Zhuhai)	Nov 16, 2023
A Bundled Approach to Deontic Logic @ Phil Department of Nankai University	Nov 10, 2023
Knowing Who in Groups, CELIA-II @Institute of Philosophy, Czech Academy of Sciences	Oct 5, 2023
A Bundled Approach to Deontic Logic @ Joint seminar of Nihil& LIRa, ILLC, UvA	Sept 26, 2023
A Bundled Approach to Deontic Logic @ CLAR'23, Zhejiang University	Sept 9, 2023
Logic: Gateway to Philosophy, Math, and CS @ No.5 Highschool of Beijing	June 20, 2023
Logical Diving with Bundles @ Fenghua Lecture of PKU-IFP	June 16, 2023
What ChatGPT may not do? @ BAAI Annual Meeting	June 10, 2023
Professional Ethics for Professors @ Faculty Training Program of PKU	May 13, 2023
Strong Permission Bundled @ CAS-Institute of Philosophy	May 12, 2023
What is Logic? @ China Mobile	April 5, 2023
Knowing how to plan @ Workshop on MAS	Dec 14th, 2022
Hidden Bundles @ Informal Gathering of Logicians, Tsinghua	Dec 11th, 2022
Knowing how to understand intuitionistic logic @ Pittsburgh Epistemology Workshop	Dec 2nd, 2022
Bundle Modalities: from a previous life to this one @ Frontiers of Logic Research	Nov 20th, 2022
Epistemic Logic: From Philosophy to AI @ New Engineering Tea Time	Oct 20th, 2022
Knowing How to Plan @ Foundations and Applications of AI, PKU	April 6th, 2022
Epistemic Logic and Epistemic Puzzles @ SCNU	Dec 9th 2021
Academic Ethics relevant to you and me @ NCML 2021	Dec 3rd, 2021
Intuitionistic Logic as an Epistemic Logic of Knowing How @ LiRA + A C joint Seminar, ILLC	Nov 11th, 2021
What is Intuitionistic Truth? @National Conference on Philosophy of Math:	Nov 6th, 2021
Bundled Fragments of First-order Modal Logic and Its Applications @ Fudan Logic Seminar:	Oct 14th, 2021
Planning-based knowing how: a unified approach @ IJCAI Journal Track	Aug 25, 2021
Decoding Non-classical Logics @ Math, Logic and Philosophy Workshop	July 7, 2021
Hintikka meets Plato: An Adventure of $\exists\Box$ @PKU Philosophy Symposium	April 14, 2021
Knowing How to Understand Intuitionistic Logic @ Delta Workshop	April 10, 2021
Hintikka meets Plato @ Sichuan University	Dec 24, 2020
When names are not commonly known: epistemic logic with assignments @Tsinghua University	May 5, 2020
Logics of Knowing How @ Wuhan University	Dec 28, 2019
Epistemic Logic: From Philosophy to AI @ Hongyi Lecture Series, Wuhan University	Dec 27, 2019
On Supervising Graduate Students @ NCML2019	Nov 9, 2019
Beyond Knowing That: A New Generation of Epistemic Logic @LORI	Oct. 18, 2019