Zhiguang Zhao

Employment
10/2019-
Researcher
School of Mathematics and Statistics
Taishan University

Education
01/2014-02/2018
PhD in Logic
Applied Logic Group
Faculty of Technology, Policy and Management
Delft University of Technology

09/2011-08/2013
MSc in Logic
Logic and Mathematics Track
Institute for Logic, Language and Computation
Faculty of Science
University of Amsterdam

09/2007-07/2011
BA in Philosophy (Major)
Logic and Philosophy of Science Track
Department of Philosophy
Peking University

09/2008-07/2011
BSc in Mathematics (Minor)
Pure and Applied Mathematics Track
School of Mathematical Sciences
Peking University

Research Interest non-classical logic, modal logic, intuitionistic logic, algebraic logic, hybrid logic
correspondence theory, canonical extension, duality theory
logic and counting

Theses
1. PhD Thesis: **Unified Correspondence and Canonicity**, supervised by Prof. dr Ibo van de Poel and Dr Alessandra Palmigiano, Delft University of Technology, ISBN 978-94-6186-898-5, defended on 23/02/2018

2. MSc Thesis: **Algebraic Canonicity of Non-Classical Logics**, supervised by Dr Alessandra Palmigiano, University of Amsterdam, defended on 29/08/2013, score: 9/10

3. BA Thesis: **Combining Preference and Belief: From Statics to Dynamics**, supervised by Prof. Dr Feng Ye and Prof. Dr Fenrong Liu, Peking University, defended on 31/05/2011, score: 95/100

Journal Papers
1. **Correspondence Theory for Modal Fairtlough-Mendler Semantics of Intuitionistic Modal Logic**, Studia Logica, to appear

2. **Decidability for Modal Logic with Counting ML(#) in Different Frame Classes**, with Xiaoxuan Fu, Studies in Logic, to appear

3. **Sahlqvist Correspondence Theory for Modal Logic with Quantification over Relations**, with Fei Liang, Studies in Logic, to appear

4. **Correspondence and Canonicity Theory of Quasi-Inequalities and Π_2-Statements in Modal Subordination Algebras**, Logic Journal of the IGPL, doi.org/10.1093/jigpal/jzad003

5. **Sahlqvist Completeness Theory for Hybrid Logic with Downarrow Binder**, Logic Journal of the IGPL, doi.org/10.1093/jigpal/jzac079

6. **Jónsson-Style Canonicity for Distributive Modal μ-Calculus**, Logic Journal of the IGPL, 31(3):401-421 (2023)

7. **Sahlqvist Correspondence Theory for Second-Order Propositional Modal Logic**, Journal of Logic and Computation, Journal of Logic and Computation, 33(3):577-598 (2023)

8. **Algorithmic Correspondence for Hybrid Logic with Binder**, Logic Journal of the IGPL, 31(1):39-67 (2023)

9. **Algorithmic Correspondence Theory for Sabotage Modal Logic**, Studies in Logic, 15(6):66-92 (2022)

10. **Undecidability Results of Modal Definability in Extended Modal Languages**, Studies in Logic, 14(6):25-40 (2021)

11. **Sahlqvist Correspondence for Instantial Neighbourhood Logic**, Studies in Logic, 14(3):1-23 (2021)

12. **Algorithmic Correspondence and Canonicity for Possibility Semantics**, Journal of Logic and Computation, 31 (2): 523-572 (2021)

13. **Sahlqvist via Translation**, with Willem Conradie and Alessandra Palmigiano, Logical Methods in Computer Science, February 22, 2019, Volume 15, Issue 1 (2019)

14. **Unified Correspondence as a Proof-theoretic Tool**, with Giuseppe Greco, Minghui Ma, Alessandra Palmigiano and Apostolos Tzimoulis, Journal of Logic and Computation, 28 (7): 1367-1442 (2018)

15. **Unified Correspondence and Proof Theory for Strict Implication**, with Minghui Ma, Journal of Logic and Computation, 27 (3): 921-960 (2017)

16. **Sahlqvist Theory for Impossible Worlds**, with Alessandra Palmigiano, Sumit Sourabh, Journal of Logic and Computation, 27 (3): 775-816 (2017)

17. **Jónsson-style Canonicity for ALBA Inequalities**, with Alessandra Palmigiano, Sumit Sourabh, Journal of Logic and Computation, 27 (3): 817-865 (2017)

Papers in Proceedings

1. **A Logic for Preference Lifting under Uncertainty and its Decidability**, with Xiaoxuan Fu, in CLAR 2023, to appear

2. **Dynamic Modal Logic with Counting: when Reduction Axioms Work and Fail**, with Xiaoxuan Fu, in CLAR 2023, to appear

3. **Correspondence Theory for Generalized Modal Algebras**, in Logic, Language, Information, and Computation - 28th International Workshop, WoLLIC 2022, LNCS 13468, pp 53-69 (2022)

4. **Algorithmic Sahlqvist Preservation for Modal Compact Hausdorff Spaces**, in Logic, Language, Information, and Computation - 24th International Workshop, WoLLIC 2017, LNCS 10388, pp 387-400 (2017)

5. **Constructive Canonicity for Lattice-based Fixed Point Logics**, with Willem Conradie, Andrew Craig and Alessandra Palmigiano, in Logic, Language, Information, and Computation - 24th International Workshop, WoLLIC 2017, L-NCS 10388, pp 92-109 (2017)

6. **Universal Models for the Positive Fragment of Intuitionistic Logic**, with Nick Bezhanishvili, Dick de Jongh, Apostolos Tzimoulis, in Logic, Language, and Computation: 11th International Tbilisi Symposium on Logic, Language, and Computation, TbiLLC 2015, LNCS 10148, pp.229-250 (2017)

7. **Generalised Ultraproduct and Kirman-Sondermann Correspondence for Vote Abstention**, with Geghard Bedrosian and Alessandra Palmigiano, in Logic, Rationality and Interaction: 5th International Workshop on Logic, Rationality and Interaction - LORI 2015, LNCS 9394, pp. 27-39 (2015)

8. **An Abstract Algebraic Logic View on Judgment Aggregation**, with María Esteban and Alessandra Palmigiano, in Logic, Rationality and Interaction: 5th International Workshop on Logic, Rationality and Interaction - LORI 2015, LNCS 9394, pp. 77-89 (2015)

9. **Positive Formulas in Intuitionistic and Minimal Logic**, with Dick de Jongh, in Logic, Language, and Computation: 10th International Tbilisi Symposium on Logic, Language, and Computation, TbiLLC 2013, LNCS 8984, pp 175-189 (2015)

Papers Submitted

1. **Spectral Correspondence Theory for Logics not Based on Bounded Lattices**

2. **Discrete and Topological Correspondence Theory for Modal Meet-Implication Logic in Filter Semantics**, with Fei Liang

3. **Taming "McKinsey-like" formula: An Extended Correspondence and Completeness Theory for Hybrid Logic H(@)**

4. **Modal Logic with Counting: Definability, Semilinear Sets and Correspondence Theory**, with Xiaoxuan Fu

5. **Model-Theoretic and Axiomatic Aspects of Modal Logic with Counting**, with Xiaoxuan Fu

Papers in Preparation

1. **Calculi for Modal Compact Hausdorff Spaces**, with Nick Bezhanishvili, Luca Carai and Silvio Ghilardi

Talks

1. **Modal Logic with Counting**, Southwest University, China, 08/04/2023

2. **Duality Theory in Logic: Algebra and Topology**, Shandong University, China, 16/03/2023

3. **Modal Logic with Counting**, Shandong University, China, 13/03/2023

4. **Modal Logic with Counting: Definability, Semilinear Sets and Correspondence Theory**, Tsinghua University, online, China, 11/12/2022

5. **Sahlqvist Correspondence Theory for Modal Logic with Quantification over Relations**, NCML 2022, Jinan, China, 29/10/2022

6. **Sahlqvist Correspondence Theory for Second-Order Propositional Modal Logic**, SAL Annual Meeting 2022, Jinan, China, 24/09/2022

7. **Correspondence Theory for Generalized Modal Algebras**, WoLLIC 2022, Iasi, Romania, 20/09/2022

8. **Algebraic Correspondence Theory: A Duality-Theoretic Perspective**, Tsinghua Logic Salon, online, China, 03/03/2022

9. **Undecidability Results of Modal Definability in Extended Modal Languages**, NCML 2021, Zhuhai, China, 04/12/2021

10. **Sahlqvist Correspondence Theory for Second-Order Propositional Modal Logic**, SOQE 2021, virtual, 04/11/2021

11. **An Introduction to Correspondence Theory**, Sichuan University, China, 03/11/2021

12. **Algebraic Correspondence Theory**, Shandong University, China, 19/06/2021

13. **An Introduction to Correspondence Theory**, Shandong University, China, 18/06/2021

14. **Algorithmic Correspondence and Canonicity for Possibility Semantics**, SOQE 2017, Dresden, Germany, 07/12/2017

15. **Algorithmic Correspondence and Canonicity for Possibility Semantics**, Logic Seminar, Peking University, China, 07/11/2017

16. **Algorithmic Correspondence and Canonicity for Possibility Semantics**, ALCOP 2017, Glasgow, UK, 11/04/2017

17. **Algorithmic Correspondence and Canonicity for Possibility Semantics**, Logic Workshop, University of Johannesburg, South Africa, 25/01/2017

18. **Canonicity and Relativized Canonicity via Pseudo Correspondence**, WOLC 2016, Guangzhou, China, 09/12/2016

19. **Algorithmic Correspondence and Canonicity for Possibility Semantics**, WOLC 2016, Guangzhou, China, 08/12/2016

20. **Constructive Canonicity for Lattice-based Fixed Point Logics**, WOLC 2016, Guangzhou, China, 07/12/2016

21. **Sahlqvist via Translation**, WOLC 2016, Guangzhou, China, 05/12/2016

22. **Constructive Canonicity for Lattice-based Fixed Point Logics**, SYSMICS 2016, Barcelona, Spain, 06/09/2016

23. **Constructive Canonicity for Lattice-based Fixed Point Logics**, Advances in Modal Logic 2016, Budapest, Hungary, 02/09/2016

24. **Generalised Ultraproduct and Kirman-Sondermann Correspondence for Vote Abstention**, PhD Colloquium, Delft University of Technology, the Netherlands, 21/04/2016

25. **Sahlqvist via Translation**, ALCOP 2016, Vienna, Austria, 08/04/2016

26. **Generalised Ultraproduct and Kirman-Sondermann Correspondence for Vote Abstention**, Logic Workshop, University of Johannesburg, South Africa, 08/01/2016

27. **An Abstract Algebraic Logic View of Judgment Aggregation**, LORI 2015, Taipei, Taiwan, China, 31/10/2015

28. **Generalised Ultraproduct and Kirman-Sondermann Correspondence for Vote Abstention**, LORI 2015, Taipei, Taiwan, China, 30/10/2015

29. **A Comparison Between Two Kinds of Canonicity Proofs**, Workshop on Correspondence and Canonicity in Non-Classical Logic, ILLC, Universiteit van Amsterdam, the Netherlands, 08/09/2015

30. **Generalised Ultraproduct and Kirman-Sondermann Correspondence for Vote Abstention**, Trends in Logic XV, Delft, the Netherlands, 03/07/2015

31. **An Abstract Algebraic Logic View of Judgment Aggregation**, TACL 2015, Ischia, Italy, 26/06/2015

32. **Jónsson-style Canonicity for ALBA-Inequalities**, TACL 2015, Ischia, Italy, 26/06/2015

33. **Algorithmic Correspondence and Proof Theory for Strict Implication**, TACL 2015, Ischia, Italy, 22/06/2015

34. **An Abstract Algebraic Logic View of Judgment Aggregation**, PhDs in Logic VII, Vienna, Austria, 14/05/2015

35. **Algebraic Method in Social Choice**, Logic and Algebra Day, University of Johannesburg, South Africa, 09/01/2015

36. **An Algebraic View of Judgement Aggregation**, Lorentz Workshop "Logics for Social Behavior", Leiden, the Netherlands, 10/11/2014

37. **A Brief Introduction to Social Choice Theory**, PhD Colloquium, Delft University of Technology, the Netherlands, 11/09/2014

38. **Sahlqvist Theory for Regular Modal Logics**, Advances in Modal Logic 2014, Groningen, the Netherlands, 05/08/2014

39. **Several Approaches to Belief Revision**, Applied Logic Seminar, Delft University of Technology, the Netherlands, 28/04/2014

40. **Two Methods of Canonicity Proofs**, Logic and Algebra Day, University of Johannesburg, South Africa, 24/01/2014

41. **Algebraic Canonicity in Non-classical Logics**, Logic Seminar, CLLC, Peking University, China, 17/09/2013

42. **The Universal Model for the Positive Fragment of Intuitionistic Logic**, Seminar on Provability, Interpretability, Intuitionism and Arithmetic, ILLC, Universiteit van Amsterdam, the Netherlands, 21/11/2012

43. **A Combined Logic of Preference and Belief**, Mini-workshop on Modal Logic, Language and Logical Dynamics, 22nd meeting of Beijing Logic Forum For Young Scholars, China, 12/06/2011

Projects as PI

1. Starting Grant for Doctorates, **Studies on Algebraic Sahlqvist Theory**, CNY 200,000, Taishan University, 01/2020-12/2022

2. Beijing Innovation Program Research Fellowship for Undergraduate Students, title: **The Representations of Uncertainty**, CNY 5,000, Peking University, 07/2009-09/2010

Projects Attended

1. National Social Science Fund of China project no.21CZX049, **Philosophical Studies on Body-Mind Relationship and Causality**, member

2. National Social Science Fund of China project no.18CZX063, **Studies on Formal Epistemology Based on Modern Epistemic Logic**, member

3. National Social Science Fund of China project no.16CZX049, **Studies on Structural Proof Theory of Non-Classical Propositional Logics**, member

Scientific Visits	
	1. Department of Logic, Nicolaus Copernicus University, Poland, 29/07/2023-26/08/2023
	2. Institute of Logic and Intelligence, Southwest University, China, 05/04/2023-09/04/2023
	3. School of Philosophy and Social Development, Shandong University, China, 04/03/2023-18/03/2023
	4. Department of Philosophy, Sichuan University, China, 28/10/2021-03/11/2021
	5. School of Philosophy and Social Development, Shandong University, China, 18/06/2021-20/06/2021
	6. School of Philosophy, Fudan University, China, 05/08/2019-09/08/2019
	7. Department of Mathematics, University of Johannesburg, South Africa, 02/01/2017-31/01/2017
	8. Theory and Logic Group, Institute of Computer Languages, Technische Universität Wien, 11/04/2016-15/04/2016
	9. Department of Mathematics, University of Johannesburg, South Africa, 05/01/2016-29/01/2016
	10. Department of Mathematics, University of Johannesburg, South Africa, 31/12/2014-31/01/2015
	11. Department of Mathematics, University of Johannesburg, South Africa, 21/01/2014-10/02/2014

Teaching

- As lecturer:

    1. Winter 2023, **Abstract Algebra**, Taishan University
    2. Summer 2023, **Abstract Algebra**, Taishan University
    3. Autumn 2022, **Abstract Algebra**, Taishan University
    4. Summer 2022, **Abstract Algebra**, Taishan University
    5. Autumn 2021, **Abstract Algebra**, Taishan University
    6. Autumn 2020, **Advanced Mathematics IIIA**, Taishan University
    7. Spring 2020, **Advanced Mathematics IB**, Taishan University
    8. Winter 2019, **Probability Theory and Mathematical Statistics**, Taishan University
    9. Autumn 2019, **Linear Algebra**, Taishan University

- As coordinator:

    1. Spring 2023, **Introduction to Logic**, Taishan University

- As teaching assistant:

    1. Spring 2017, **Argumentation and Philosophy of Science**, TU Delft
    2. Winter 2015, **Integration Economics, Law, Philosophy and Technology**, TU Delft
    3. Winter 2014, **Ethics and Engineering for Aerospace Engineering**, TU Delft

Supervision	• Bachelor theses supervised:

- Bachelor theses supervised:
  - Taishan University: 7 in 2020, 5 in 2021, 5 in 2022, 6 in 2023
  - Shandong University: 1 in 2023
- External examiner for theses:
  - Xin Sun, *The Study of Semi-structured Fuzzy Argumentation*, Shandong University, MA in Logic, 2023
  - Xiaoyang Wang, *Tense Logic and its Extensions over Lattices*, Peking University, PhD in Logic, 2023
  - Yiwen Ding, *The Semantics and Proof Theory of Default Reasoning Logic*, Shandong University, MA in Logic, 2022
- Defense committee member for theses:
  - Xin Sun, Wenyu Yang, Shandong University, Master, 2023
  - Yiwen Ding, Fangce Zhang, Lei Li, Ziran Gao, Zhiwei Yang, Shandong University, Master, 2022

Awards and Honors

1. High-level talent of Tai'an (no. C2020090013), Government of Tai'an City, 2020
2. Taishan scholar young specialist (no. tsqn201909151), Government of Shandong Province, 2019-2024
3. EMEA scholarship, Erasmus Mundus Program, European Commission, 09/2011-06/2013

Academic Service

- PC member for LORI 2023
- Local Organizer for Trends in Logic XV: Logics for Social Behavior, Delft, the Netherlands, 2015
- Co-organizer of Applied Logic Seminar at TU Delft, 2016-2017
- Member of Council for Shandong Association of Logic
- Reviewing Service (27 papers in total):
  - *Journal of Logic and Computation* (3)
  - *Studia Logica* (2)
  - *Logic Journal of the IGPL* (2)
  - *Journal of Applied Logic* (1)
  - *Journal of Philosophical Logic* (2)
  - *Studies in Logic* (1)
  - *Journal of Applied Non-Classical Logics* (1)
  - *Outstanding Contributions to Logic devoted to Larisa Maksimova* (1)
  - *TARK 2011* (2)
  - *ICALP 2014* (1)
  - *NCML 2016* (1)
  - *TbiLLC 2017* (2)
  - *SOQE 2017* (2)
  - *NCML 2018* (2)

- *TARK 2021* (1)
- *NCL 2022* (1)
- *post-proceedings of WOLC 2016* (1)
- *post-proceedings of TbiLLC 2017* (1)

Membership
- Shandong Association of Logic
- Dutch Association for Logic (Vereniging voor Logica)

Summer Schools Attended

1. 26/06/2023-30/06/2023, **3rd Tsinghua Logic Summer School**, Tsinghua University, China (online)

2. 27/06/2022-03/07/2022, **2nd Tsinghua Logic Summer School**, Tsinghua University, China (online)

3. 16/05/2022-21/05/2022, **9th Indian School on Logic and its Applications**, Indian Institute of Technology Kanpur, India (online)

4. 26/07/2021-13/08/2021, **32th European Summer School in Logic, Language and Information**, online

5. 28/06/2021-04/07/2021, **1st Tsinghua Logic Summer School**, Tsinghua University, China (online)

6. 21/06/2021-25/06/2021, **Summer School in Mathematical Logic**, Fudan University, China (online)

7. 05/08/2019-09/08/2019, **Summer School in Mathematical Logic**, Fudan University, China

8. 15/06/2015-19/06/2015, **Topology, Algebra, and Categories in Logic**, University of Salerno, Salerno, Italy

9. 11/08/2014-22/08/2014, **26th European Summer School in Logic, Language and Information**, University of Tübingen, Tübingen, Germany

10. 03/07/2014-08/07/2014, **3rd East-Asian School on Logic, Language and Computation**, Tsinghua University, Beijing, China

Language Skills   Chinese (Native), English (Fluent), Italian (Elementary)

Other Interests   coin collecting (since 2011), stamp collecting (since 1998), Wikipedia (since 2005), postcards (since 2012)