



Wenbo Zhang

Associate Professor

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PERSONAL INFORMATION

I am currently an associate professor at Shanghai Ocean University. In 2020, I obtained my Ph.D. degree from BASICS lab at Shanghai Jiao Tong University, where I focused on formal verification that employs mathematical techniques to establish the correctness of software systems.

- **Address:** College of Information Technology, Shanghai Ocean University, No. 999, Hucheng Ring Road, Shanghai.
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EMPLOYMENT

- **Associate Professor** (2024 - present)
College of information technology, [Shanghai Ocean University](#), China
- **Lecturer** (2021 - 2024)
College of information technology, [Shanghai Ocean University](#), China

EDUCATION

- **Software Engineering, Ph.D.** (2014 - 2020)
BASICS Lab, [Shanghai Jiao Tong University](#), Shanghai, China
Supervisor: [Prof. Yuxi Fu](#).
PhD thesis: [On Bisimilarity Equivalence Checking Problems](#). (in Chinese)
- **Software Engineering, Bachelor** (2010 - 2014)
[Southeast University](#), Nanjing, China

SELECTED PUBLICATIONS

- **Bisimulation Equivalence of Pushdown Automata is Ackermann-Complete** [\[Link\]](#)
[Wenbo Zhang](#), [Qiang Yin*](#), [Huan Long](#) and [Xian Xu](#)
In *Proceedings of the 47th International Colloquium on Automata, Languages and Programming (ICALP)*, 141:1-14, 2020.
- **Logical Characterization of Branching Bisimilarity over Random Processes** [\[Link\]](#)
[Xian Xu](#) and [Wenbo Zhang*](#)
Information Processing Letters, 106596, 2025.



- **MSPT: A Transformer-Based Model Using MultiScale Periodic Information for 10-30d Subseasonal Daily Sea Surface Temperature Forecasting** [\[Link\]](#)
Qi He, Zhenfeng Lan, [Wei Song](#), [Wenbo Zhang*](#), Yanling Du and Wei Zhao
IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, vol. 18, 8399-8415, 2025.
- **The Principle of Staking: Formal Verification of Staking Smart Contract** [\[Link\]](#)
Zhongyun Zhang, Kundu Chen, Weiqi Guo and [Wenbo Zhang*](#)
In Proceedings of the 10th International Symposium on Dependable Software Engineering: Theories, Tools, and Applications (SETTA), 161-179, 2024.
- **Analyzing Divergence for Nondeterministic Probabilistic Models** [\[Link\]](#)
Hao Wu, [Yuxi Fu*](#), [Huan Long](#), [Xian Xu](#) and [Wenbo Zhang](#)
arXiv, 2024.
- **Speech preprocessing and enhancement based on joint time domain and time-frequency domain analysis** [\[Link\]](#)
[Wenbo Zhang](#), Xuefeng Xie, Yanling Du* and Dongmei Huang
The Journal of the Acoustical Society of America, 155(6), 3580-3588, 2024.
- **The Parametric Complexity of Bisimulation Equivalence of Normed Pushdown Automata** [\[Link\]](#)
[Wenbo Zhang](#)
Frontiers of Computer Science, 16(4): 1-7, 2022.
- **State-of-the-art Survey of Smart Contract Verification Based on Formal Methods** [\[Link\]](#)
[Wenbo Zhang](#), Simin Chen, [Lifei Wei](#), [Wei Song](#), and Dongmei Huang*
Chinese Journal of Network and Information Security (in Chinese), 8(4): 12-28, 2022.
- **On Decidability of the Bisimilarity on Higher-order Processes with Parameterization** [\[Link\]](#)
[Xian Xu*](#) and [Wenbo Zhang*](#)
In Proceedings of Combined 28th International Workshop on Expressiveness in Concurrency and 18th Workshop on Structural Operational Semantics (EXPRESS/SOS), EPTCS 339: 76-92, 2021.
- **On the Interactive Power of Higher-order Processes Extended with Parameterization** [\[Link\]](#)
[Wenbo Zhang](#), [Xian Xu*](#), [Qiang Yin](#) and [Huan Long](#)
Formal Aspects of Computing, 33(2): 151-183, 2021.
- **Uniform Random Process Model Revisited** [\[Link\]](#)
[Wenbo Zhang](#), [Huan Long](#) and [Xian Xu](#)
In Proceedings of the 17th Asian Symposium on Programming Languages and Systems (APLAS), 388-404, 2019.
- **State-of-the-Art Survey on Verification of Vector Addition Systems** [\[Link\]](#)
[Wenbo Zhang](#) and [Huan Long](#)
Journal of Software (in Chinese), Vol. 29(6), 1566-1581, 2018.

TEACHING

- **Discrete Mathematics**
Autumn Semester 2022, Autumn Semester 2023, Autumn Semester 2024



上海海洋大学
SHANGHAI OCEAN UNIVERSITY

- **Artificial Intelligence**
Autumn Semester 2021, Autumn Semester 2022, Autumn Semester 2023, Autumn Semester 2024
- **Software Engineering**
Spring Semester 2022, Spring Semester 2023
- **Programming Foundations**
Autumn Semester 2024