

Reasoning about object-oriented programs: from classes to interfaces $\mathsf{Bian}, \mathsf{J}.$

Citation

Bian, J. (2024, May 21). *Reasoning about object-oriented programs: from classes to interfaces*. Retrieved from https://hdl.handle.net/1887/3754248

Version: Publisher's Version

License: License agreement concerning inclusion of doctoral thesis in the

Institutional Repository of the University of Leiden

Downloaded from: https://hdl.handle.net/1887/3754248

Note: To cite this publication please use the final published version (if applicable).

Acknowledgements

Getting through the journey of a Ph.D. is no small feat: it's tough and demands a lot, but also filled with rewards and growth. I could not made this challenging without a lot of people who have been there for me, offering guidance, supporting, and inspiring me. I wish to express my gratitude here to those who made this journey possible.

First and foremost, I want to extend my deepest appreciation to my supervisors, Prof.dr. F.S. de Boer and Prof.dr. M.M. Bonsangue. Thank you for offering me the chance to pursue my Ph.D. in the field of formal methods. Frank, your guidance during the pivotal moments of my academic journey were invaluable. Your unwavering support and insightful advice have been instrumental in my Ph.D. research. It's truly a privilege to have had the opportunity to work under your guidance throughout my doctoral journey. Marcello, I feel incredibly lucky to have met you five years ago in Beijing. I'm deeply thankful for your mentorship and generous support during my Ph.D. studies.

Next, I want to thank Hans-Dieter Hiep. I appreciate all the discussions and collaborations with you as a daily supervisor throughout this long PhD journey. I have experienced many moments of frustration and feeling lost in research. No matter when I was confused or fell in trouble, you always tried your best to help me. I am thankful for what you have done as a co-author and as a friend. I also want to express my gratitude to my other co-author, Stijn de Gouw. It was a pleasure and an honor to collaborate with you.

I would like to express my appreciation to my doctorate committee members: Prof. Dr. R.V. van Nieuwpoort, Prof. Dr. H.C.M. Kleijn, Prof. Dr. M.-C. Jakob, Dr. E. Poll, Prof. Dr. M. Sirjani, Dr. A.W. Laarman. Thank you for taking the time to read my Ph.D. thesis. Your comments have greatly improved the state of the thesis.

I want to express my gratitude to all the members of the formal method group at CWI: Farhad, Benjamin, Kasper, Luc. I enjoyed the many interesting lunchtime discussions with you. Thank you for sharing your knowledge and providing insightful suggestions about my research. I feel lucky to have made so many friends in Leiden and across the Netherlands, which made my studies much more enjoyable and less stressful. To my best friend in Leiden, Hui Feng, who was the first person I got to know upon my arrival: your support in both my research and personal life has been incredibly helpful.

8. ACKNOWLEDGEMENTS

I also want to thank my friend in China who has provided me with care and assistance from afar. Despite the vast distance between us, I can still sense your concern and support. I particularly want to express my gratitude to my lifelong best friend, Zhiyu Gu, who also designed the cover of this thesis.

Finally, I would like to give my greatest thanks to my family: my parents and my younger brother, Jinde Bian (David). To my father and my mother: though you may not understand my research, your unconditional love, encouragement, and support have never faltered. Your belief in me, even in moments of doubt, has been a guiding light. To my brother David: your presence is a source of joy and fortune in my life, and I am immensely thankful for it. My special appreciation goes to my husband, Mingrui Lao. In your thesis acknowledgment, you recognized me as your girlfriend, and now, it fills me with great joy to express my gratitude to you as your wife. Your constant encouragement and company have been pillars of strength for me. The journey has been remarkable, and I look forward to the many more beautiful moments we will create together.

Jinting Bian May, 2024 Leiden, the Netherlands

Curriculum Vitae

Jinting Bian was born in Taiyuan, China, on December 18, 1994. In 2013, she started her Bsc. study at Changzhi University in Changzhi, ShanXi, China, and received her Bsc. degree in 2017. After that, she started her Msc. studies in Computer Security and Resilience at the University of Newcastle upon Tyne in Newcastle, the United Kingdom, and obtained her Msc. degree in 2018.

In October 2019, she started her PhD research supported by the China Scholarship Council (CSC No. 202007720094). She worked at the Leiden Institute of Advanced Computer Science (LIACS), Leiden University, the Netherlands, and the Centrum voor Wiskunde & Informatica (CWI), Amsterdam, the Netherlands, under the supervision of prof.dr. F.S. de Boer and prof.dr. M.M. Bonsangue. Jinting's research interests include formal methods, type theory, and program correctness. She has published papers in international journals and conferences, including Formal Methods and Formal Methods in System Design.

Publication List

- Bian, J., Hiep, H. A., de Boer, F. S., de Gouw, S. (2023). Integrating ADTs in KeY and their application to history-based reasoning about collection. Formal Methods in System Design, volume 61, pages 63-89.
- Bian, J., Hiep, H. A., de Boer, F. S., de Gouw, S. (2021). Integrating ADTs in KeY and their application to history-based reasoning. In Proceedings of the 24th International Symposium on Formal Methods (FM 2021), LNCS 13047, pages 255-272, Springer.
- Hiep, H. A., **Bian, J.**, de Boer, F. S., de Gouw, S. (2020). History-based specification and verification of Java collections in KeY. In Proceedings of the 16th International Conference on Integrated Formal Methods (IFM 2020), LNCS 12546, pages 199-217.
- Hiep, H. A., **Bian, J.**, de Boer, F. S., de Gouw, S. (2020). A Tutorial on Verifying LinkedList Using KeY. Deductive Software Verification: Future Perspectives, LNCS 12345, pages 221-245. Springer.
- de Boer, F. S., de Gouw, S., Hiep, H. A., **Bian, J.** (2022). Footprint Logic for Object-Oriented Components. In Proceedings of the 18th International Conference on Formal Aspects of Component Software, LNCS 13712, pages 141-160. Springer.
- Hiep, H. A., Maathuis, O., **Bian, J.**, de Boer, F. S., de Gouw, S. (2022). Verifying OpenJDK's LinkedList using KeY (extended paper). International Journal on Software Tools for Technology Transfer, volume 24(5), pages 783-802.
- Hiep, H. A., Maathuis, O., Bian, J., de Boer, F. S., van Eekelen, M., de Gouw, S. (2020). Verifying openjdk's linkedlist using KeY. In Proceedings of the 26th International Conference on Tools and Algorithms for the Construction and Analysis of Systems (TACAS 2020), LNCS 12079, pages 217-234.