



Universiteit
Leiden
The Netherlands

Searching by learning: Exploring artificial general intelligence on small board games by deep reinforcement learning

Wang, H.

Citation

Wang, H. (2021, September 7). *Searching by learning: Exploring artificial general intelligence on small board games by deep reinforcement learning*. Retrieved from <https://hdl.handle.net/1887/3209232>

Version: Publisher's Version

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/3209232>

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

Cover Page



Universiteit Leiden



The handle <https://hdl.handle.net/1887/3209232> holds various files of this Leiden University dissertation.

Author: Wang, H.

Title: Searching by learning: Exploring artificial general intelligence on small board games by deep reinforcement learning

Issue Date: 2021-09-07

Acknowledgements

The foremost and deepest gratitude is offered to my three supervisors, Prof.dr. Aske Plaat, Dr. Michael Emmerich and Dr. Mike Preuss, who have introduced me to the fascinating research fields of deep reinforcement learning, game playing and multi-objective optimization, and who have guided me to develop a better understanding of the research fields and the scientific spirit of academia. Prof. Plaat, thank you for your trust and encouragement. And thank you for your help and support of finding computation resources and connecting to other researchers in the field. I was always deeply touched when I received your kind response and valuable feedback after asking for your help. Dr. Emmerich, thank you for your guidance, your trust and encouragement. You always help me in time. And I am grateful that you offered me enough trust and freedom to focus on games. Dr. Preuss, thank you for your supervision, especially during the Corona quarantine, also thank you for introducing me to your research community. I am so lucky since all of you are so kind and always willing to help me, both in academic research and in my personal life.

Besides, I would like to thank my thesis committee: Prof.dr. Thomas Bäck, Prof.dr. Marcello Bonsangue, Prof.dr. Joost Batenburg, Prof.dr. Mark Winands, Dr. Mitra Baratchi, Dr. Thomas Moerland and Dr. Ingo Schwab for your insightful comments and suggestions.

To my colleagues in Reinforcement Learning group and Natural Computing group, I sincerely thank you for your help and cooperation. I am so honoured to work with you. I also want to thank LIACS staff, especially Marloes van der Nat and Abdeljalil El Boujadayni for your kind help with daily issues.

I deeply thank my parents, Jiangshan Wang and Yuezhi Song, and my elder sister, Wei Wang, for your consistent trust, support, encouragement and unconditional love. To my niece, Jiaxin Wu, my sister's lovely daughter, currently the youngest

Acknowledgements

member in my family, your birth is a switch-point of my life since it teaches me the meaning of love and responsibility.

To all of my teachers, classmates and friends during the last 23 years of my study career and my relatives, I would like to thank you for your selfless help, especially Prof.dr. Wu Chen, who led me to the academia and Guoqiang Zhang, my best friend, who consistently supported me.

Last but not the least, thanks to China Scholarship Council for the financial support that enables me to conduct my research and make many good friends in Leiden.

Curriculum Vitae

Hui Wang was born on February 13th, 1992 in Taihu, Anhui, People's Republic of China. He received his Bachelor degree in Computer Science and Technology at Southwest University in June 2015. Then he studied as a Master student and obtained his Master degree in Software Engineering under the supervision of Prof. Wu Chen at the same university in June 2017.

In September 2017, he joined the reinforcement learning research group headed by Prof. Aske Plaat and started his PhD study at Leiden Institute of Advanced Computer Science (LIACS), Leiden University, under the supervision of Prof. Aske Plaat, Dr. Michael Emmerich and Dr. Mike Preuss. His research was funded by China Scholarship Council (CSC).

His research primarily focuses on assessing/developing searching and learning techniques in (deep) reinforcement learning on board games. Besides his research, he also acted as a teaching assistant for two postgraduate courses every year, namely Reinforcement Learning and Multi-Objective Decision Analysis. What's more, he also participated in several academic seminars, such as Dagstuhl seminar (Artificial and Computational Intelligence in Games: Revolutions in Computational Game AI). And he helped to organize 2020 Benelux AI conference (BNAIC) as the multimedia chair.

Curriculum Vitae
