Emergence of linguistic universals in neural agents via artificial language learning and communication

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List of publications

- Yuchen Lian, Arianna Bisazza, and Tessa Verhoef. 2021. The effect of efficient messaging and input variability on neural-agent iterated language learning. In *Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP)*, pages 10121–10129. Association for Computational Linguistics.
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- Yuchen Lian, Arianna Bisazza, and Tessa Verhoef. 2025. Simulating the emergence of differential case marking with communicating neural-network agents. In *Proceedings of the Annual Meeting of the Cognitive Science Society (CogSci)*.
- Zhijing Li, Yuchen Lian, Xiaoyong Ma, Xiangrong Zhang, and Chen Li. 2020. Bio-semantic relation extraction with attention-based external knowledge reinforcement. *BMC bioinformatics*, 21:1–18.
- Pargorn Puttapirat, Haichuan Zhang, Yuchen Lian, Chunbao Wang, Xi-

angrong Zhang, Lixia Yao, and Chen Li. 2018. Openhi-an open source framework for annotating histopathological image. In *IEEE International Conference on Bioinformatics and Biomedicine (BIBM)*, pages 1076–1082.

Curriculum Vitae

Yuchen Lian was born on 27 February 1997 in Xuzhou, China. In her junior high school years, she was admitted to the Honors Youth Program of Xi'an Jiaotong University in 2012, marking the beginning of her journey as a XJTU student. She completed a two-year preparatory program in 2014 and obtained her Bachelor of Science in Computer Science and Technology in 2018. In the same year, she was recommended for direct admission to the Ph.D. program at her alma mater, under the supervision of Chen Li.

During her first year as a Ph.D. student, she successfully applied for the Joint Ph.D. Program between Xi'an Jiaotong University and Leiden University, supported by the Chinese Scholarship Council (CSC No. 201906280463). In September 2019, she arrived at Leiden University and began her Ph.D. research at the Leiden Institute of Advanced Computer Science (LIACS), supervised by Aske Plaat, Tessa Verhoef, and Arianna Bisazza (from the University of Groningen).

Throughout her doctoral studies, Yuchen's research has focused on investigating language evolution through AI-facilitated, agent-based models. Complementing her technical expertise, she has advanced her professional skills through courses in scientific conduct, strengthening her capacity to share research and manage complex projects in preparation for a research career in computer science.