

Zhiwei He (何志威)

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About me

I am a third-year PhD student (2021 - present) of Department of Computer Science and Engineering at Shanghai Jiao Tong University (SJTU). I am fortunate to be advised by Prof. Rui Wang. Before that, I received the bachelor degree in Software Engineering from South China University of Technology (SCUT). I am currently a research intern at Tencen AI Lab, co-advised by Dr. Xing Wang and Dr. Zhaopeng Tu.

Research Overview

Autonomous Agent powered by Large Language Models

- 📖 Multi-agent debate. [Pre-print]
- 📖 World and user model. [Ongoing]
- 📖 Evaluating and improving agent safety. [Pre-print]

Watermark for Large Language Models

- 📖 Cross-lingual consistency for text watermark [Ongoing]

Human-centered Machine Translation

- 📖 Bridging the gap between training signal and real user input. [ACL 2022]
- 📖 Human-like translation strategy. [TACL 2023]
- 📖 Improving translation with human feedback. [Pre-print]

Education

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| 2021 – present | 📖 PhD, Shanghai Jiao Tong University Computer Science.
Supervisor: Rui Wang |
| 2017 – 2021 | 📖 BSc, South China University of Technology Software Engineering.
Ranking: 1/252 GPA: 3.91 |

Internship

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| 2021 – present | 📖 Tencent AI Lab Research Intern
Mentors: Xing Wang & Zhaopeng Tu |
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Awards & Competitions

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| 2022 | 📖 1st place in the WMT22 General Translation Task, English to Livonian (Unconstrained System). |
| | 📖 2nd place in the WMT22 General Translation Task, Livonian to English (Unconstrained System). |
| 2018, 2019 | 📖 First Class Scholarship. |

Publications

* denotes co-first authors

Preprint

- **Improving Machine Translation with Human Feedback: An Exploration of Quality Estimation as a Reward Model**
Zhiwei He, Xing Wang, Wenxiang Jiao, Zhuosheng Zhang, Rui Wang, Shuming Shi, Zhaopeng Tu
arXiv 2024 | PDF 
- **R-Judge: Benchmarking Safety Risk Awareness for LLM Agents**
Tongxin Yuan*, Zhiwei He*, Lingzhong Dong, Yiming Wang, Ruijie Zhao, Tian Xia, Lizhen Xu, Binglin Zhou, Fangqi Li, Zhuosheng Zhang, Rui Wang, Gongshen Liu
arXiv 2024 | PDF  | Github 
- **Igniting Language Intelligence: The Hitchhiker's Guide From Chain-of-Thought Reasoning to Language Agents**
Zhuosheng Zhang, Yao Yao, Aston Zhang, Xiangru Tang, Xinbei Ma, Zhiwei He, Yiming Wang, Mark Gerstein, Rui Wang, Gongshen Liu, Hai Zhao
arXiv 2023 | PDF  | Github 
- **Encouraging Divergent Thinking in Large Language Models through Multi-Agent Debate**
Tian Liang*, Zhiwei He*, Wenxiang Jiao*, Xing Wang, Yan Wang, Rui Wang, Yujiu Yang, Zhaopeng Tu, Shuming Shi
arXiv 2023 | PDF  | Github 

Journal Article

- **Exploring Human-Like Translation Strategy with Large Language Models**
Zhiwei He*, Tian Liang*, Wenxiang Jiao, Zhuosheng Zhang, Yujiu Yang, Rui Wang, Zhaopeng Tu, Shuming Shi, Xing Wang
TACL 2023 | PDF  | Github  | Media 

Conference Proceedings

- **TeCS: A Dataset and Benchmark for Tense Consistency of Machine Translation**
Yiming Ai, Zhiwei He, Kai Yu, Rui Wang
ACL 2023 | PDF  | Github 
- **Tencent AI Lab-Shanghai Jiao Tong University Low-Resource Translation System for the WMT22 Translation Task**
Zhiwei He, Xing Wang, Zhaopeng Tu, Shuming Shi, Rui Wang
WMT 2022 | PDF  | Github  | Award  : ranked **1st** (English-to-Livonian) and **2nd** (Livonian-to-English) in General Translation Task
- **Bridging the Data Gap between Training and Inference for Unsupervised Neural Machine Translation**
Zhiwei He, Xing Wang, Rui Wang, Shuming Shi, Zhaopeng Tu
ACL 2022 | PDF  | Github 