

# Keyu Wang

☎ (+49) 1525 6272814 | ✉ keyu.wang@student.uni-tuebingen.de | 🌐 website | 🎓 Google Scholar | 🐙 GitHub | 🔗 LinkedIn

## EDUCATION

### University of Tuebingen

*M.Sc. in Machine Learning*

Tuebingen, Germany

*Oct. 2024 – Present*

**Current GPA:** 1.28/1.0

**Relevant coursework:** Non-convex Optimization of Deep Learning, Efficient Machine Learning in Hardware, Statistical Machine Learning, Probabilistic Machine Learning, Understanding LLMs, etc.

### Southeast University

*B.Eng. in Artificial Intelligence*

Nanjing, China

*Sep. 2020 – Jun. 2024*

**Cumulative GPA:** 3.79/4.0, Top 10%

**Relevant coursework:** Linear Algebra, Calculus, Optimization, Probability Statistics & Stochastic Processes, Data Structures, Database, Distributed Systems, Machine Learning, Deep Learning, Natural Language Processing, etc.

## RESEARCH INTERESTS

- **AI Efficiency & MLSys:** Efficient and scalable model training, fine-tuning, deployment and inference.
- **Reasoning:** Chain-of-Thought, Pretraining/RL/Inference Scaling, Efficient Reasoning with System Co-design, etc.
- **Optimization & ML Theory:** Theory of DL and LLMs, e.g., normalization, optimization and generalization, etc.
- **Generative AI:** Large Language Models, Diffusion Models, Multimodal Large Language Models.

## PUBLICATIONS

### Peer-reviewed Conference

[1] **Can Large Language Models Understand DL-Lite Ontologies? An Empirical Study.**

Keyu Wang, Guilin Qi, Jiaqi Li and Songlin Zhai. *In Findings of the Association for Computational Linguistics: EMNLP 2024*, pages 2503–2519. <https://aclanthology.org/2024.findings-emnlp.141/>

[2] **An Embedding-based Approach to Inconsistency-tolerant Reasoning with Inconsistent Ontologies.**

Keyu Wang, Site Li, Jiaye Li, Guilin Qi and Qiu Ji. *In Proceedings of the 12th International Joint Conference on Knowledge Graphs*. <https://arxiv.org/abs/2304.01664>

### Journal

[1] **Embedding Ontologies via Incorporating Extensional and Intensional Knowledge.**

Keyu Wang, Guilin Qi, Jiaoyan Chen, Yi Huang and Tianxing Wu. *In Data Intelligence*, Vol. 7, Issue 4, 1222-1241, 2024. DOI: <https://doi.org/10.3724/2096-7004.di.2024.0088>

## RESEARCH EXPERIENCE

### Wild, Efficient, and Innovation AI Lab | ELLIS Tuebingen & MPI-IS

*Research intern | Supervisor: Dr. Shiwei Liu*

Tuebingen, Germany

*Mar. 2025 – Present*

- Investigating on LLM layer pruning:
  - (1) Demystifying different roles of LLMs' layers in terms of retrieval, knowledge, and reasoning;
  - (2) Reasoning-aware Pruning.

### Knowlegde Science & Engineering Lab | Southeast University

*Research intern | Supervisor: Prof. Dr. Guilin Qi*

Nanjing, China

*Feb. 2022 – Jun. 2024*

- Investigated on neuro-symbolic knowledge representation and reasoning, especially, reasoning and embedding with knowledge-based and web-based systems such as knowledge graphs and description logic ontologies.
- Led three research projects and produced three first-author manuscripts which were accepted by *EMNLP 2024 Findings*, *IJCKG 2023* and *Data Intelligence Journal* respectively:
  - (1) Evaluating LLMs' Reasoning and Understanding with Description Logic Knowledge Bases;
  - (2) Embedding-based Rational Inconsistency-tolerant Reasoning in Description Logics;
  - (3) Knowledge Embedding via Incorporating Extensional and Intensional Knowledge.

INDUSTRIAL INTERNSHIP

<b>BSH Home Appliances Holding (China) Co., Ltd</b>	Nanjing, China
<i>Intern   Head: Rick Du; Mentor: Huilong An</i>	<i>Jul. 2023 – Jun. 2024</i>
<ul style="list-style-type: none"><li>• <b>AI-enabled efficient R&amp;D in Wash Machine/Dryer:</b> Bridged the logical and casual relationships among hardware platform, program design, test standard, intermediate data and performances of Bosch and Siemens wash machines, especially, built a predictive model via deep learning to predict washing performances.</li></ul>	

AWARDS

<b>Selected Grants</b>	
<ul style="list-style-type: none"><li>• <b>Provincial Innovation and Entrepreneurship Project Fund for University Students</b> (&lt; 5%)</li></ul>	
Role: Lead   Value: 8000 CNY ( $\approx$ 1067 EUR)	Jul. 2022 – May. 2023
<b>Selected Awards</b>	
• <b>Huawei Scholarship</b>	Dec. 2022
• <b>First Prize in Advanced Mathematics Competition of Jiangsu Province</b>	Jun. 2021
• <b>First Prize in Advanced Mathematics Competition of Southeast University</b> (rank 8, < 0.5%)	Apr. 2021
• <b>First Prize in Programming Contest of Southeast University</b> (rank 5, < 5%)	Dec. 2020
• <b>Silver Medal in China Southeast Mathematical Olympiad</b>	Jul. 2019

EXTRACURRICULAR

Student lecturer for the course <i>An Entertaining Introduction to AI at the Second Class for Students</i>	
	Sep. 2022 – Dec. 2022, Sep. 2023 – Dec. 2023
Engineering leader & co-founder of AI Association of Southeast University [SEU-131AIClub]	May 2022 – Jun. 2023
Study advisor for freshman undergraduates	Sep. 2022 – Jun. 2023

SKILLS

<b>Programming:</b> Python (PyTorch), C/C++, Triton, Java, etc.	
<b>Tools:</b> VS Code, Jupyter Notebook, Shell, Linux, Git, L <sup>A</sup> T <sub>E</sub> X, Markdown, etc.	
<b>Languages:</b> Chinese (Native), English (Fluent, IELTS 7.5).	