

# Yuxian Gu

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## Education

### Tsinghua University

PH.D. STUDENT IN COMPUTER SCIENCE AND TECHNOLOGY

- Member of **Tsinghua Conversational AI Group (CoAI)**
- Research Interest: Natural Language Processing
- Supervisor: Prof. Minlie Huang

Beijing, China

Sept. 2021 - Present

### Tsinghua University

B. ENG. IN COMPUTER SCIENCE AND TECHNOLOGY

Beijing, China

Sept. 2017 - June 2021

## Selected Publications

### [1] MiniLLM: Knowledge Distillation of Large Language Models

Yuxian Gu, Li Dong, Furu Wei, Minlie Huang. In *Proceedings of the Twelfth International Conference on Learning Representations (ICLR)*, 2024.

### [2] Pre-Training to Learn in Context

Yuxian Gu, Li Dong, Furu Wei, Minlie Huang. In *Proceedings of the 61th Annual Meeting of the Association for Computational Linguistics (ACL)*, 2023. (Oral)

### [3] EVA2.0: Investigating Open-Domain Chinese Dialogue Systems with Large-Scale Pre-Training

Yuxian Gu\*, Jiaxin Wen\*, Hao Sun\*, Yi Song, Pei Ke, Chujie Zheng, Zheng Zhang, Jianzhu Yao, Lei Liu, Xiaoyan Zhu, Minlie Huang. *Machine Intelligence Research*, 2022.

### [4] Learning Instructions with Unlabeled Data for Zero-Shot Cross-Task Generalization

Yuxian Gu, Pei Ke, Xiaoyan Zhu, Minlie Huang. In *Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP)*, 2022. (Oral)

### [5] PPT: Pre-Trained Prompt Tuning for Few-Shot Learning

Yuxian Gu\*, Xu Han\*, Zhiyuan Liu, Minlie Huang. In *Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics (ACL)*, 2022.

### [6] CPM-2: Large-Scale Cost-Effective Pre-Trained Language Models

Zhengyan Zhang\*, Yuxian Gu\*, Xu Han\*, Shengqi Chen\*, Chaojun Xiao\*, Zhenbo Sun, Yuan Yao, Fanchao Qi, Jian Guan, Pei Ke, Yanzheng Cai, Guoyang Zeng, Zhixing Tan, Zhiyuan Liu, Minlie Huang, Wentao Han, Yang Liu, Xiaoyan Zhu, Maosong Sun. *AI Open*, 2022.

### [7] Pre-Trained Models: Past, Present and Future

Xu Han\*, Zhengyan Zhang\*, Ning Ding\*, Yuxian Gu\*, Xiao Liu\*, Yuqi Huo\*, Jiezhong Qiu, Yuan Yao, Ao Zhang, Liang Zhang, Wentao Han, Minlie Huang, Qin Jin, Yanyan Lan, Yang Liu, Zhiyuan Liu, Zhiwu Lu, Xipeng Qiu, Ruihua Song, Jie Tang, Ji-Rong Wen, Jinhui Yuan, Wayne Xin Zhao, Jun Zhu. *AI Open*, 2022.

### [8] When does Further Pre-training MLM Help? An Empirical Study on Task-Oriented Dialog Pre-training

Qi Zhu, Yuxian Gu, Lingxiao Luo, Bing Li, Cheng Li, Wei Peng, Minlie Huang, Xiaoyan Zhu. In *Proceedings of the Second Workshop on Insights from Negative Results in NLP (EMNLP Workshop)*, 2021. (Best Paper)

### [9] CPM: A Large-Scale Generative Chinese Pre-Trained Language Model

Zhengyan Zhang, Xu Han, Hao Zhou, Pei Ke, Yuxian Gu, Deming Ye, Yujia Qin, Yusheng Su, Haozhe Ji, Jian Guan, Fanchao Qi, Xiaozhi Wang, Yanan Zheng, Guoyang Zeng, Huanqi Cao, Shengqi Chen, Daixuan Li, Zhenbo Sun, Zhiyuan Liu, Minlie Huang, Wentao Han, Jie Tang, Juanzi Li, Xiaoyan Zhu, Maosong Sun. *AI Open*, 2021.

### [10] Train No Evil: Selective Masking for Task-Guided Pre-Training

Yuxian Gu, Zhengyan Zhang, Xiaozhi Wang, Zhiyuan Liu, Maosong Sun. In *Proceedings of the Empirical Methods in Natural Language Processing (EMNLP)*, 2020. (short)

## Experience

### Tsinghua NLP Lab

STUDENT RESEARCH ASSISTANT

- Supervised by Prof. Zhiyuan Liu.

Beijing, China

Sep. 2018 - Feb. 2020

### Microsoft Research Asia

RESEARCH INTERN

- Supervised by Dr. Li Dong and Dr. Furu Wei

Beijing, China

Oct. 2022 - Present

## Honors & Awards

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2021	<b>Excellent Graduate, Tsinghua University</b> Awarded to graduates with excellent achievements by Tsinghua University.	<i>Tsinghua University</i>
2021	<b>Outstanding Graduate, Dept. CST, Tsinghua University</b> Awarded to graduates with excellent achievements by Department of Computer Science and Technology, Tsinghua University.	<i>Tsinghua University</i>
2021	<b>Outstanding Undergraduate Dissertation, Tsinghua University</b> Awarded to outstanding undergraduate dissertations by Tsinghua University.	<i>Tsinghua University</i>
2020	<b>Overall Scholarship</b> Awarded to students with excellent achievements by Department of Computer Science and Technology, Tsinghua University.	<i>Tsinghua University</i>
2019	<b>Science and Technology Innovation Excellence Scholarship</b> Awarded to students with excellent scientific potential by Department of Computer Science and Technology, Tsinghua University.	<i>Tsinghua University</i>
2019	<b>Silver Prize, 2019 Asia Student Supercomputer Challenge</b> World-wide contest on super-computing.	<i>Dalian, China</i>
2018	<b>Overall Scholarship</b> Awarded to students with excellent achievements by Department of Computer Science and Technology, Tsinghua University.	<i>Tsinghua University</i>
2017	<b>Second Grade Scholarship for Freshman</b> Awarded to students with excellent overall achievements in high school, Tsinghua University.	<i>Tsinghua University</i>
2016	<b>1st Prize, Chinese Physics Olympiad in Provinces</b> Nation-wide contest on physics.	<i>Beijing, China</i>
2016	<b>1st Prize, Pan-Pearl River Delta and Chinese Elite Schools Physics Olympiad</b> Nation-wide contest on physics.	<i>Shenzhen, China</i>

## Projects

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### CPM-2: Large-scale Cost-effective Pre-trained Language Models

JAN. 2021 - JUNE. 2021

- The largest open-source Chinese pre-trained language model (11B parameters).
- Encoder-decoder architecture. Based on Megatron-LM and DeepSpeed. Language understanding and generation.
- Open Source: <https://github.com/TsinghuaAI/CPM-2-Pretrain>

### EVA: Large-scale Open-domain Chinese Dialogue System

SEP. 2021 - JAN. 2022

- The largest open-source Chinese dialogue model with pre-training (2.8B parameters).
- Encoder-decoder architecture. Based on DeepSpeed. Open-domain chit-chat.
- Open Source: <https://github.com/thu-coai/EVA>

## Teaching Assistantships

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### Object Oriented Programming

Instructor: Prof. Minlie Huang

### Artificial Neural Networks

Instructor: Prof. Minlie Huang

*Tsinghua University*

*Spring 2022, 2023*

*Tsinghua University*

*Fall 2021, 2022, 2023*