

# Chengsong Huang

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## EDUCATION

**Bachelor of Engineering in Software Engineering, Fudan University** Aug. 2019 - Jul. 2023 (expected)

- Overall GPA: **3.82/4.0**; Ranking: **1/97**
- First Prize in Scholarship for Outstanding Students at Fudan University (top 1%) Dec. 2021
- Awarded a Scholarship of Shanghai City (top 2%) Nov. 2022

## NOTABLE PUBLICATIONS

- Lin, B. Y\*, Huang, C.\*, Liu, Q., Gu, W., Sommerer, S., & Ren, X. (2022). On Grounded Planning for Embodied Tasks with Language Models. <http://arxiv.org/abs/2209.00465> *AAAI*
- Gu, C., Huang, C., Zheng, X., Chang, K., & Hsieh, C. (2022). Watermarking Pre-trained Language Models with Backdooring. *arXiv [cs.AI]*. <http://arxiv.org/abs/2210.07543> (currently under review)
- Xie, C., Liang, J., Liu, J., Huang, C., Huang, W., & Xiao, Y. (2021). Revisiting the Negative Data of Distantly Supervised Relation Extraction. *ACL/IJCNLP*.
- Xie, C., Huang, W., Liang, J., Huang, C., & Xiao, Y. (2021). WebKE: Knowledge Extraction from Semi-structured Web with Pre-trained Markup Language Model. *CIKM*

## RESEARCH EXPERIENCES

**Grounded Planning for Embodied Tasks** | Research Assistant May. 2022-Nov.2022

Advisor: **Xiang Ren** (Assistant Professor at the University of South California's Computer Department)

- Implemented a method that encodes environmental information; proposed novel iterative decoding methods which cause a 50% improvement in BLEU-4.
- Designed a step-to-step evaluation protocol; Evaluated the plan generated by LM and proposed a new metric—KeyActionScore; improved the system by matching the action tuples

**Watermarking Language Model with Multitask Backdoor** | Research Assistant Apr. 2022-Present

Advisor: **Xiaoqing Zheng** (Associate Professor of Computer Department, Fudan University)

- Used a rare word or a combination of normal words as the backdoor for several downstream tasks
- Implemented the framework for generation the poisonous dataset and training the watermarked LM and extracted the watermarks 98% successfully

**Table Structure Recognition by pretraining tasks** | Research Assistant Mar.2022-Present

Advisor: **Xiaoqing Zheng** (Associate Professor of Computer Department, Fudan University)

- Created two new pretraining tasks; made predictions for column headers and the relative position of texts—adapts to table structure recognition
- Constructed a larger dataset with pairs of complex tables and improved its structure representations; Observed an improvement of 2% tree-editing-distance-score compared to alternative sota methods

**Web Information Extraction by Language Model** | Research Assistant Apr. 2021- May 2021

Advisor: **Yanghua Xiao** (Professor of Computer Department, Fudan University)

- Proposed innovative text processing methods to parse semi-structured text into Incorporated contextual and location information
- Performed data pre-processing which made it easier to compare datasets; completed 300 lines of core codes which combined the location information and word information
- Developed an in-depth understanding of web-related information extraction

**Addressing unbalanced labels in Relation Extraction** | Research Assistant. Jan. 2021- Feb. 2021

Advisor: **Yanghua Xiao** (Professor of Computer Department, Fudan University)

- Created comparative tests, analyzed experimental results, and provided proof of the original hypothesis using statistics and curves to emphasize the efficacy of our method
- Performed pre-processes and baseline replication processes to show the advantages of our methods
- Learned PUlearning-related methods and papers; developed a thorough understanding of this area

## WORK EXPERIENCE

Future Internship at Sea AI Lab (SAIL) Expected start: Jan.2023

**Fudan University** | Teaching Assistant Sep. 2021-Feb. 2022/Sep. 2022-Feb. 2023

- As a teaching assistant Helped teach both *Data Structures and Algorithms* and *Probability and Mathematical Statistics* courses during multiple semesters; helped write exams and answer questions