

Hanxu Hu

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EDUCATION

- **University of Edinburgh** Edinburgh, Scotland
MRes - NLP, supervisor: Dr. Edoardo M. Ponti
Sept. 2023 - Sept. 2024
- **University of Edinburgh** Edinburgh, Scotland
*Master in Computer Science with **Distinction Degree***
Sept. 2021 - Nov 2022
- **Nanjing University of Science and Technology (NJUST)** Nanjing, China
Bachelor - Measuring, Control Technology and Instrumentations
Sept. 2017 - June 2021
rank 2/50 in first three years
Core Courses: Signals and Systems, Error Theory, Data Structure and Algorithm

EMPLOYMENT

- **Westlake University** HangZhou, China
Research Assistant - WestlakeNLP, mentor: Prof. Yue Zhang
Sept. 2022 - present
- **Nanjing University of Science and Technology** Nanjing, China
Research Intern - PCA Lab, mentor: Prof. Xiushen Wei
May. 2021 - Sept. 2021

HONORS AND AWARDS

- IBM Third Place Prize for Best Project in MLP Course - April, 2022 (Top **2%**)
- First Class School Scholarship, 2019 (awarded to **5%**)
- Second Class School Scholarship, 2019 (awarded to **10%**)

PUBLICATIONS AND PREPRINTS

- (Under Review) **Chain-of-Symbol Prompting Elicits Planning in Large Language Models**
Hanxu Hu *; Hongyuan Lu *; Huajian Zhang; Wai Lam; Yue Zhang.
Sumbitted to ICLR 2024
- **Meta-Learning For Multi-Modal Cross-Lingual Transfer**
Hanxu Hu and Frank Keller.
Appear in 3rd MRL workshop @ EMNLP 2023
- **Improving Controlled Table-To-Text Generation Robustness**
Hanxu Hu; Zhongyi Yu; Yunqing Liu; Laura Perez-Beltrachini.
Accepted as EACL2023(Findings)
- **A Channel Mix Method For Fine-grained Cross-modal Retrieval**
Yang Shen; Xuhao Sun; Xiu-Shen Wei; **Hanxu Hu**; Zhipeng Chen.
Accepted in IEEE ICME2022

ACADEMIC SERVICE

- EMNLP2023 Reviewer, EMNLP2023 Volunteer

RESEARCH EXPERIENCE

- **Language Models are Sequential Instructions Follower** Edinburgh
Targeting for NAACL 2024, first author Jul 2023 - Present
 - Proposed the **sequential instruction tuning** method which give a sequence of instructions and enable LMs to act sequentially based on given instructions. The previous task in the instructions can be beneficial to the later task in the instructions.
 - Verified our method in multilingual NLU tasks (using *first translate then answer* instruction)
- **Chain-of-Symbol Prompting For Spatial Relationships in LLMs** Hangzhou
Under Reviewed in ICLR2024, first author Jul 2023 - Present
 - Proposed Chain-of-Symbol prompting method to use chained symbols to express the complex spatial relationships originally described by natural languages.
 - Verified the effectiveness of the proposed method in spatial QA and planning tasks, using less number of tokens and gain better performance compared with CoT described by natural languages.
- **Meta-Learning For Multi-Modal Cross-Lingual Transfer** Edinburgh
MSc thesis May 2022 - Oct. 2022
 - Proposed a novel contrastive meta-learning fine-tuning framework, applied MAML in a multi-modal cross-lingual transfer manner.
 - Boosted performance of pre-trained multi-modal models in multi-modal cross-lingual tasks.
 - Conducted a series of ablation studies to empirically proved the effect of each parts of the proposed method.
- **Improving Controlled Table-To-Text Generation Robustness** Edinburgh
MLP Course Group Project (Group Leader), first author Jan. 2022 - May. 2022
 - Proposed a novel training scheme by constructing noise in current controllable table-to-text dataset, then optimized it by reinforcement learning algorithm
 - Gained the results which are equal or even better compared with current state-of-the-art methods in the ToTTo dataset.
- **A Channel Mix Method For Fine-grained Cross-modal Retrieval** Nanjing
Research Assistant in PCA Lab of NJUST May 2021 - Sept. 2021
 - Worked on Fine-grained Cross-Modal retrieval task, which cross four modalities. Leveraging Mix-Channel Method to improve the interaction between modalities.
 - Proposed a Mix-Channel Method to improve the interaction between modalities
 - Gain significant improvement in all modalities in the fine-grained retrieval benchmark based on CUB200 dataset.

OTHER PROJECTS

- **A Multi-Functional Fast Movie Search Engine:** We build a Movie Search Website, using VUE framework. Based on BM25 algorithm, we modified it, adding normalized score of authority computed by ratings and votes. Ranking the most related and qualified movies, celebrates for a given query. (March 22)

SKILLS SUMMARY

- **Programming Languages:** Python, JAVA
- **Frameworks:** Pytorch, NLTK, SpaCy, TensorFlow, Scikit
- **Skills:** SysAdmin (Linux, MacOS), Cloud Management (GCP)
- **Languages:** English (TOEFL 95), Mandarin