Muyi Wang

Email: whywmy@outlook.com | wm024@ie.cuhk.edu.hk
Website: https://mooyiwang.github.io

Education

Harbin Institute of Technology, Shenzhen — Shenzhen, China
B.Eng. in Computer Science and Technology — *Sept. 2020 – Jun. 2024*

- Overall GPA: 3.944/4.0, **94.495/100**
- **Core GPA: 3.968/4.0**, 94.277/100
- **Ranking:** 18/529 (**Top 3.4%**)
- **Curriculum Highlights:** Computer Architecture 100, Computer Design and Practice 100, Compiler Principles 99, Formal Language and Automaton Theory 98, Operating System 98, Computer System 97, Principles of Computer Organization 97, Set Theory and Graph Theory 97, Modern Algebra 97, Computer Networking 96, Natural Language Processing 94, Probability Theory and Mathematical Statistics 95, Linear Algebra and Analytic Geometry 93, Advanced Mathematics B 93
- **IELTS:** 7 (L:7.5, R:7.5, W:6, S:7)

The Chinese University of Hong Kong — Hong Kong SAR
Ph.D. in Information Engineering — *Aug. 2024 – Jul. 2028(expected)*

Publications & Preprints

* indicates equal contribution.

- Y. Sun*, **M. Wang***, J. Bao, B. Liang, X. Zhao, C. Yang, M. Yang and R. Xu, "PITA: Prompting Task Interaction for Argumentation Mining" accepted to *The 62nd Annual Meeting of the Association for Computational Linguistics*, 2024. [PDF]

Experience

Research Assistant — Sept. 2022 – Jan. 2023
Institute of Data Security — Harbin Institute of Technology, Shenzhen
Supervisor: Prof. Chuanyi Liu — *School of Computer Science and Technology*
Co-Supervisor: Dr. Peiyi Han — *School of Computer Science and Technology*

- **Part.I** Participated in the whole research process to model and synthesize ECG data. Using generated data to alleviate the Non-IID (Non Independently Identically Distribution) issue. Different from most existing ECG data generation models that use convolutional neural network, this work formulates the task as a tabular data synthesis problem and proposes a GAN model.
- **Part.II** focused on "Automated Federated Debugging Techniques for Privacy Preservation". Designed a model debugging methodology tailored for federated learning environments, successfully identifying data slices that negatively impacted model performance.

Research Assistant — Sept. 2022 – Jun. 2024
Human Language Technology Lab — Harbin Institute of Technology, Shenzhen
Supervisor: Prof. Ruifeng Xu — *School of Computer Science and Technology*

- Participated in the whole research process to tackle Argumentation Mining (AM) task from both conventional and novel perspectives by utilization of Graph Neural Networks and Pre-trained Language Model. Resolving the three interacted subtasks of AM (i.e. ACTC, ARI and ARCT) in a unified multi-task learning framework on both tree and non-tree structured argumentation.
- **Part.I Hypergraph with HGTrans** Tackling the tasks by constructing a hypergraph that represents relations among the argument components (ACs), which explicitly parses the significant relations among ACs, fully exploiting the rich and complementary information between the subtasks for modeling the argumentation structures. Proposed a Hypergraph Transformer(HGTrans) for AM, which makes our multi-task learning framework more effective to capture the comprehensive information from the input text.

- **Part.II PITA: Prompting Task Interaction for Argumentation Mining**
  To comprehensively explore the potential of Language Models (LM) and Prompt Schemes, we also proposed a methodology incorporating task interaction knowledge into the LM framework by utilizing a soft prompt scheme and deploying a knowledge injection, thereby augmenting the LM's capabilities. Empirical evaluations consistently demonstrate "state of the art" performance compared to the previous and HGTrans method.

Honors & Awards

Undergraduate Academic Merit Scholarship - first (Top 5%)	2022 & 2023
National Encouragement Scholarship	2022 & 2023
Second Prize in China Undergraduate Mathematical Contest in Modeling (CUMCM), Guangdong Province	2022
Second Prize in the Chinese Mathematics Competitions (CMC), Heilongjiang Province	2021 & 2022
First Prize in First Year Project (Top 2%)	2021

Selected Projects

Children's Companionship Assistant Robot Oct. 2020 – Oct. 2021

Supervisor: Prof. Yanfu Yang *Harbin Institute of Technology, Shenzhen*

- As a project leader, I coordinated the project schedule and was responsible for the software part of the development. Based on Raspberry Pi platform, built a robot with both intelligent recognition and early education functions.
- Won the **first prize** in Freshman Year Project Selection(Top 2%) |code|

AircraftWar Android APP Mar. 2022 – Jun. 2022

Supervisor: Dr. Yang Yang *Harbin Institute of Technology, Shenzhen*

- As a project leader, we completed the development of a real time matchmaking aircraft game *Aircraft War*, which consists of functions of single game, online battle and ranking board, etc. Based on Android platform, implemented 3K lines of code in Java to realize all functions. Data structures like Tree, linked list and related algorithms were utilized when designing the system.
- Ranked **1st** in all groups of this course. |code|demo video|

Multi-Cycle RISC-V CPU SoC Jun. 2022 – Jul. 2022

Supervisor: Dr. Zhongming Jiang *Harbin Institute of Technology, Shenzhen*

- Independently designed a Multi-Cycle CPU that could run all mini RISC-V instructions with VIVADO and replicated on the FPGA chip . The whole system is a classical 5-stage pipeline CPU which includes modules of Instructions Fetch, Instruction Decode, Execution, Memory, Write Back, Controller and Hazard Handler, implementing how different signals flow among modules to make it work.
- Ranked **1st** in all students of this course. |code|

Campus Stray Cats Handbook Website Oct. 2022 – Dec. 2022

Supervisor: Dr.Min Fang *Harbin Institute of Technology, Shenzhen*

- Independently developed a website named *Campus Stray Cats Handbook* , aiming at helping efficiently manage stray cats on the campus. The main services of the website are cats information displaying & management, cats checking records management, cats feeding records management and data statics.
- Designed a MySQL database for the management of cats information, implementing 1K lines of both front-end and back-end code in Python. |code|demo video|

Skills

Languages: English (fluent), Mandarin Chinese (native)

Programming: Python, C/C++, Java, Verilog

Framework: PyTorch

Tools: Linux, Git, MATLAB, VS Code, LaTeX, Markdown, CMake, Web Establishment