

YEN-HSIANG WANG

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Summary

NLP researcher specializing in LLM-powered retrieval and query expansion, focusing on low-resource settings. Experienced in both academic research and industrial AI applications. Currently passionate about improving the robustness of LLM reasoning models and developing AI agents with enhanced reliability and interpretability.

Publications

Conference/Journal Papers

(† indicates equal contribution.)

- 1 **Yen-Hsiang Wang**, Feng-Dian Su, Tzu-Yu Yeh, Yao-Chung Fan. [A Cross-Lingual Statutory Article Retrieval Dataset for Taiwan Legal Studies](#) In *ROCLING 2024*. (Best Paper Nominee)
- 2 You-Cheng Liao, Chen-Jui Yu, Chi-Yi Lin, He-Feng Yun, **Yen-Hsiang Wang**, Hsiao-Min Li, Yao-Chung Fan. [Learning-From-Mistakes Prompting for Indigenous Language Translation](#) In *ACL LoResMT 2024*.
- 3 Xingdi Yuan, Tong Wang, **Yen-Hsiang Wang**[†], Emery Fine, Rania Abdelghani, Pauline Lucas, Hélène Sauzéon, Pierre-Yves Oudeyer. [Selecting better samples from pre-trained LLMs: a case study on question generation](#) In *Findings of ACL 2023*.
- 4 Rania Abdelghani, **Yen-Hsiang Wang**, Xingdi Yuan, Tong Wang, Pauline Lucas, Hélène Sauzéon, Pierre-Yves Oudeyer. [GPT-3-driven pedagogical agents to train children's curious question-asking skills](#) In *International Journal of Artificial Intelligence in Education*.

Tutorial

- ROCLING 2024 "Mastering Retrieval-Augmented Generation: Unlocking Advanced Retrieval Techniques," [[Website](#) and [Slide](#)]

Selected Project

PTT Social Analyze Engine | *Scikit-learn, ElasticSearch, FastAPI, Docker*

Sep. 2024 – Dec. 2024

- **Social Opinion Clustering:** Applied the K-means algorithm to cluster topics within a specified time frame on PTT (web forum) and employed LLMs to generate concise summaries and trend-based headlines.[\[Demo\]](#)
- **PTT Social Analyze System:** Utilized BGE-M3 as a text embedding model to retrieve similar articles based on user queries and applied In-Context Learning with LLMs to produce analysis of sentiment and stance.[\[Demo\]](#)
- [\[Github Link\]](#)/[\[Site\]](#)

PTT Search Engine | *Vue.js, Flask, ElasticSearch, Docker*

Oct. 2020 – Jan. 2021

- Built a search engine including all articles and comments crawled from popular boards on PTT.
- Implemented BM25 with Elastic Search for retrieving comments from the database and processed the data using Object-Oriented Programming techniques.
- [\[Github Link\]](#) / [\[Site\]](#)

Work Experience

National Chung Hsing University Natural Language Processing Lab

Jan. 2024 – Dec. 2024

Research Assistant

Taichung, Taiwan

- Exploring how LLMs can enhance translation for low-resource or unseen languages by leveraging Chain-of-Thought reasoning and providing relevant patterns through sentence retrieval. [\[LoResMT ACL'24\]](#)
- Proposed a scalable method for generating synthetic legal QA dataset and validating the performance of Sparse embedding, Dense embedding, and LLM query expansion in legal domain retrieval. [\[Dataset\]](#)[\[Paper\]](#)
- Building a Retrieval Augmentation Generation application for agricultural domain question-answering, focusing on retrieval and re-ranking methods to enhance accuracy. [\[Shennong-TAIDE\]](#).

EmotiBot

Jun. 2023 – Dec. 2023

Machine Learning Engineer

Taipei, Taiwan

- Implemented LLM-powered intelligent customer support systems for Apple and KGI Securities, optimizing RAG-based retrieval models to reduce response latency and improve user satisfaction.

Inria, National Institute for Research in Digital Science and Technology

Mar. 2022 – Sep. 2022

Research Engineer Intern

France

- Developed an LLM-driven educational framework to generate curiosity-driven questions for elementary students, reducing manual effort and enhancing the quality of educational materials. [\[IJAIED\]](#)
- Researching on Question Generation Sampling and Evaluation of large language models. [\[ACL'23\]](#)

Industrial Technology Research Institute

Jul. 2021 – Aug. 2021

Software Engineer Intern

Hsinchu, Taiwan

- Fine-tuned a Transformer-based model for Legal Judgement Question-Answering, enhancing legal text comprehension and improving answer accuracy.
- Developed a full-stack web-based Manual Annotation System for Data Labeling, streamlining the annotation process and improving efficiency.

Education

National Chung Hsing University

Sep. 2020 – Sep. 2022

M.S. in Computer Science. Advisor: Yao-Chung, Fan

Taichung City, Taiwan

Fu Jen Catholic University

Sep. 2016 – Jun. 2020

B.S. Computer Science and Information Engineering.

New Taipei City, Taiwan

Awards

Best Paper Nominee | ACLCLP

Nov. 2024

• Construct a Cross-Lingual Legal Retrieval Dataset for AI/NLP Research and Provide Multiple Effective Baselines.

Skills

Programming Languages

- C/C++, Python, JavaScript

Tools

- Frameworks: React, Flask, FastAPI
- Databases: MySQL, Elasticsearch, MongoDB
- ML & Big Data: PyTorch, Spark, Hadoop
- NLP: Hugging Face Transformers, PEFT, TRL (Transformers Reinforcement Learning), TGI
- LLM Toolkits: LangChain, LlamaIndex, Ollama

Language Proficiency

Chinese | Native

English | TOEFL 80

- Reading 21
- Listening 21
- Speaking 19
- Writing 19