HUNG-TING CHEN

(+1)7372742457 hung-ting.chen@nyu.edu timchen0618.github.io timchen0618

RESEARCH INTEREST

Natural Language Processing, Machine Learning. More specifically, I am interested in building systems that can understand language and respond to human queries accurately.

EDUCATION

B.S. in Electrical Engineering, National Taiwan University (NTU) *Sept. 2016 - June 2020*
Overall GPA: 4.26/ 4.30 (No. 4/177)
M.S. in Computer Science, University of Texas at Austin (UT Austin) *Aug. 2021 - May 2023*
Overall GPA: 3.95/ 4.00
Ph.D. in Computer Science, University of Texas at Austin (UT Austin) *Aug. 2023 - Aug. 2024*
Overall GPA: 4.00/ 4.00
Ph.D. in Computer Science, New York University *Aug. 2024 - Present*
Overall GPA: 4.00/ 4.00
advised by *Prof. Eunsol Choi* (Aug. 2021 - Present)

AWARDS

· 3 * Academic Excellence Award (top 5% in department in a semester)
· 2nd Place in NTUEE Undergraduate Innovation Award
· 2nd Place in Small Data Training for Medical Images Contest (held by HTC Taiwan)

PUBLICATION

· **Hung-Ting Chen**, Eunsol Choi."Open-World Evaluation for Retrieving Diverse Perspectives " *ArXiv Preprint*

· **Hung-Ting Chen**, Fangyuan Xu*, Shane A. Arora*, Eunsol Choi."Understanding Retrieval Augmentation for Long-Form Question Answering" *Conference on Language Modeling (**COLM 2024**)*

· Ge Gao*, **Hung-Ting Chen***, Yoav Artzi, Eunsol Choi."Continually Improving Extractive QA via Human Feedback" *The 2023 Conference on Empirical Methods in Natural Language Processing (**EMNLP 2023**)*

· **Hung-Ting Chen**, Michael J.Q. Zhang, Eunsol Choi."Rich Knowledge Sources Bring Complex Knowledge Conflicts: Recalibrating Models to Reflect Conflicting Evidence" *The 2022 Conference on Empirical Methods in Natural Language Processing (**EMNLP 2022**)*

· Shane Arora*, Marzena Karpinska*, **Hung-Ting Chen**, Ipsita Bhattacharjee, Mohit Iyyer, Eunsol Choi. "CaLMQA: Exploring culturally specific long-form question answering across 23 languages" *ArXiv Preprint*

· **Hung-Ting Chen***, Yu-Chieh Chao*, Ta-Hsuan Chao*, Wei-Yun Ma."Predict and Use Latent Patterns for Short-Text Conversation" *The Fourth Workshop on Reasoning and Learning for Human-Machine Dialogues at AAAI 2021*
(*indicates equal contribution)

RESEARCH EXPERIENCE

Computer Science Department, New York University (Advisor: Prof. Eunsol Choi)
Develop a Diverse Retriever (ongoing) Aug. 2024 - Present
· Devise architecture modification and training pipeline for fine-tuning a retriever with increased diversity

Salesforce AI Research (Manager: Semih Yavuz)
Improving Multi-hop Reasoning with Reasoning Chain Aggregation May 2024 - Aug. 2024
· Designed reasoning chains that could help improve multi-hop reasoning of LLMs

· Developed self-consistency-inspired aggregation scheme on various types of reasoning chains

Computer Science Department, UT Austin (Advisor: Prof. Eunsol Choi)

Evaluation of Retrieval Diversity [Arxiv Link] Sept. 2023 - May 2024

· Constructed a benchmark for evaluating whether diverse perspectives are retrieved for subjective questions
· Showed the incapability of existing retrievers to retrieve diverse perspectives and proposed improvements

Retrieval Augmentation in Long-Form QA [Arxiv Link] Oct. 2022 - Sept. 2023

· Studied how three LMs (WebGPT, GPT-3.5, and Alpaca) use retrieved documents in-context
· Collected human annotations on whether answers are supported by the reference documents in RAG setting

Continual Learning on Extractive QA [Arxiv Link] July 2022 - May 2023

· Collect multiple batches of user feedback to a QA system with Amazon Mechanical Turk
· Improve accuracy of answers by 11% using bandit learning

Knowledge Conflicts in Open-Retrieval QA [Arxiv Link] Sept. 2021 - June 2022

· Investigated knowledge conflicts between different knowledge sources in open-retrieval QA setting
· Showed that models rarely hallucinate when provided with a high-quality retriever
· Trained a separate calibrator to refrain the model from answering questions with knowledge conflicts

Institute of Information Science, Academia Sinica (Advisor: Prof. Wei-Yun Ma)

Data-to-Text Generation System [Website Link] July 2020 - July 2021

· Improved attribute mention accuracy by 17% with template-based transformer model
· Enhanced generation quality of the system via template optimization

Dialogue Generation with Latent Pattern [Github Link] [Arxiv Link] June 2019 - June 2020

· Incorporated information from a latent sentence or part-of-speech sequence predicted by model
· Obtained 36.42 BLEU-1 score on Weibo Benchmark Dataset

Speech Processing Laboratory, NTU (Advisor: Prof. Lin-Shan Lee & Hung-Yi Lee)

Entity-Aware Automatic Text Summarization [Github Link] Sept. 2018 - June 2020

· Implemented a transformer-based neural model with pointer-generator network to summarize text
· Incorporated named-entity information into summarization model with modified attention mechanism
· Introduced entity-aware embedding to enhance ROUGE-1, -2 scores by 5% and 8%

Meta-Learning on Speech Recognition Feb. 2020 - June 2020

· Investigated methods of meta-learning and implemented a paper in PyTorch [Github Link]
· Researched meta-learning methods on cross-accented automatic speech recognition

SERVICES

Teaching Assistant (TA) for *Signals and Systems* (NTU) Feb. 2019 - June 2019

· Graded assignments and two exams
· Answered questions from students during weekly office hours

TA for *Deep Learning for Human Language Processing* (NTU) Feb. 2020 - June 2020

· Designed and graded programming assignment on the topic Source Separation

TA for *Natural Language Processing* (UT Austin) Jan. 2022 - May 2022

· Graded assignments, final project and final exam
· Led a review session and answered questions from students during weekly office hours

Reviewer

· EMNLP (2022, 2023), ARR (Feb 2024, Aug 2024, Oct 2024), ACL 2023, AKBC 2022, KnowledgeLM @ ACL2024

COURSE PROJECTS

Improving VQA Model Robustness with Adversarial Inputs [Report Link] Jan. 2022 - May 2022

· Augmented the training set with adversarial inputs using paraphrase generation and adversarial attack
· Improved accuracy of various VQA backbone models on VQA-CP test set by 4-9%

Neural-Based Medical Image Analysis – Disease Detection [Github Link] Dec. 2018 - Jan. 2019

· Developed a neural model identifying 14 diseases on NIH chest X-Ray dataset
· Led the team of three people, assigned tasks, and designed project structure
· Achieved 2nd place in "Small Data Training for Medical Images Contest"

Multi-Source Domain Adaptation on DomainNet [Poster Link] May. 2019 - June. 2019

· Modified Adversarial Discriminative Domain Adaptation (ADDA) into FuzzyADDA
· Implemented Maximum Classifier Discrepancy (MCD) method
· Ranked 1st and 2nd in public and private leaderboards in Kaggle competition out of 20 teams

TECHNICAL STRENGTHS

Programming Languages	C++, Python, Matlab
Machine Learning	PyTorch, Keras, Tensorflow, Google Cloud VM, Huggingface, OpenAI APIs
Web Development	HTML, Flask, Javascript, Firebase, Heroku
Data Collection	MTurk, Prolific
Languages	Mandarin (Native), English (Fluent, TOEFL iBT: 109)

Last updated: Dec 26, 2024