Sichen Jin (Eunhyang Kim)

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Education

Seoul National University 09/2013 - 01/2018
B.Sc., Computer Science & Engineering

Employment

Samsung Research, Korea 03/2018 -
AI Researcher, Speech Intelligence Team, Global AI Center

IBM, Korea 12/2017 - 01/2018
Intern, Watson Delivery Engineer

Infosys, India 03/2017 - 06/2017
Research Intern, Question Answering

Projects

Spoken Keyword Spotting with Tiny Models 2023 - present

1. Created a more efficient audio-text joint embedding space by aligning inputs of the two modalities on-the-fly.
2. Refined the training objective to learn both embeddings and alignments simultaneously.

Internal Language Model Estimation for Speech Recognition Models 2022

1. Estimated the internal language model by leveraging different subnetworks in ASR models.
2. Experimented with methods to bias the ASR model using text-only data, and discovered that the subnetwork intended to convey linguistic information wasn't trained as expected.

Full-stack Automatic Speech Recognition Engineering for Samsung Bixby 2018 - 2022

1. Implemented and trained large-scale automatic speech recognition models (Python, C++, Java).
2. Tackled problems for commercialization such as model compression, quantization, inference-time language model integration, named entity correction, long-form speech recognition, etc.
3. Implemented, trained the auxiliary language model for ASR and refined the integration method.

Question Answering Based on Similar QA Pairs in the Database 03/2017 - 06/2017

1. Worked on similarity search between the input query and the QA pairs in the database.

Publications

** denotes equal contributions*

[1]**Sichen Jin**, Youngmoon Jung, Seungjin Lee, Jaeyoung Roh, Changwoo Han, Hoonyoung Cho. "CTC-aligned Audio-Text Embedding for Streaming Open-vocabulary Keyword Spotting", In: *Proceedings of Interspeech.* 2024 [pdf]

[2] Kyungmin Lee*, Haeri Kim*, **Sichen Jin**, Jinhwan Park, Youngho Han. "A More Accurate Internal Language Model Score Estimation for the Hybrid Autoregressive Transducer", In: *Proceedings of Interspeech*. 2023 [pdf]

[3] Jinhwan Park*, **Sichen Jin***, Sungsoo Kim*, Junmo Park*, Dhairya Sandhyana, Changheon Lee, Myoungji Han, Jungin Lee, Seokyeong Han, Changwoo Han, Chanwoo Kim. "Conformer-Based on-Device Streaming Speech Recognition with KD Compression and Two-Pass Architecture." In: *Proceedings of SLT*. 2022. [pdf]

[4] Abhinav Garg, Gowtham Vadisetti, Dhananjaya Gowda, **Sichen Jin**, Aditya Jayasimha, Youngho Han, Jiyeon Kim, Junmo Park, Kwangyoun Kim, Sooyeon Kim, Youngyoon Lee, Kyungbo Min, Chanwoo Kim. "Streaming on-device end-to-end ASR system for privacy-sensitive voice-typing." In: *Proceedings of Interspeech*. 2020. [pdf]

[5] Kwangyoun Kim*, Kyungmin Lee*, Dhananjaya Gowda, Junmo Park, Sungsoo Kim, **Sichen Jin**, Young-Yoon Lee, Jinsu Yeo, Daehyun Kim, Seokyeong Jung, Jungin Lee, Myoungji Han, Chanwoo Kim. "Attention based on-device streaming speech recognition with large speech corpus." In: *Proceedings of ASRU*. 2019. [pdf]

[6] Chanwoo Kim, Sungsoo Kim, Kwangyoun Kim, Mehul Kumar, Jiyeon Kim, Kyungmin Lee, Changwoo Han, Abhinav Garg, **Eunhyang Kim**, Minkyoo Shin, Shatrughan Singh, Larry Heck, Dhananjaya Gowda. "End-to-end training of a large vocabulary end-to-end speech recognition system." In: *Proceedings of ASRU*. 2019. [pdf]

Teaching & Mentoring

Mentor, Samsung Winter Internship 2020
Best Project Prize

TA, Programming Practice 2017

Honors & Awards

Employee of the Year, Samsung Electronics, Korea 2022

Full Scholarship for all semesters at Seoul National University 2013–2018

Invited Talk

Qatar Women in Data Science, QCRI, Qatar 11/2021
Topic: Real-World Deployment of End-to-End Speech Recognition [video]

Skills

Programming: Python (Machine Learning Frameworks), C++, Java

Language: Fluent in Korean, Chinese and English

Soft Skills: Leadership, Creativity, Independence, Problem-solving, Communication Skills