Sichen Jin (Eunhyang Kim)

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sichen-jin-ml | chenehk | Sichen Jin

Experience

- **Samsung Research** *01/2018 - Current*
  Speech AI Researcher, Speech Intelligence Team Seoul, Korea
- **IBM Korea** *12/2017 - 01/2018*
  Intern, Watson Delievery Engineer Seoul, Korean
- **Infosys** *03/2017 - 06/2017*
  Research Intern, Question Answering Bangalore, India

Education

- **Seoul National University** *09/2013 - 02/2018*
  B.Sc., Computer Science & Engineering Seoul, Korea

Projects

- **Spoken Keyword Spotting with Tiny Models** *2023 - Present*
  Speech Intelligence Team, Samsung Research, Korea
  - Created a more efficient audio-text joint embedding space by aligning inputs of the two modalities on-the-fly
  - Refined the training objective to learn both embeddings and alignments simultaneously
- **Internal Language Model Estimation for Speech Recognition Models** *2022*
  Speech Intelligence Team, Samsung Research, Korea
  - Estimated the internal language model by leveraging different subnetworks in ASR models
  - 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*
  Speech Intelligence Team, Samsung Research, Korea
  - Implemented and trained large-scale automatic speech recognition models (Python, C++, Java)
  - Tackled problems for commercialization such as model compression, quantization, inference-time language model integration, named entity correction, long-form speech recognition, etc.
  - Implemented, trained the auxiliary language model for ASR and refined the integration method
- **IBM Watson Model Delievery Engineer for Custom Chatbots** *12/2017 - 01/2018*
  Internship, IBM, Korea
  - Adapted IBM Watson dialog models and created chatbots for client companies
- **Question Answering Based on Similar QA Pairs in the Database** *03/2017 - 06/2017*
  Internship, Infosys, India
  - Worked on similarity search between the input query and the QA pairs in the database

Teaching and Mentoring

- **Mentor, Samsung Winter Internship** *11/2020*
  Samsung Research, Korea
  - Awarded the Best Project Prize
  - Mentored an internship project about basic speech recognition and language models
- **TA, Programming Practice** *09/2016 - 12/2016*
  Seoul National University
  - Mentoring and project management for the Programming Practice course

PUBLICATIONS

C=CONFERENCE, *=EQUAL CONTRIBUTION

[C6] **Sichen Jin**, Youngmoon Jung, Seungjin Lee, Jaeyoung Roh, Changwoo Han, and Hoonyoung Cho. Ctc-aligned audio-text embedding for streaming open-vocabulary keyword spotting. In *INTERSPEECH 2024*, pages 332–336, 2024.

[C5] Kyungmin Lee*, Haeri Kim*, **Sichen Jin**, Jinhwan Park, and Youngho Han. A more accurate internal language model score estimation for the hybrid autoregressive transducer. In *INTERSPEECH 2023*, pages 869–873, 2023.

[C4] Jinhwan Park*, **Sichen Jin***, Junmo Park*, Sungsoo Kim*, Dhairya Sandhyana, Changheon Lee, Myoungji Han, Jungin Lee, Seokyeong Jung, Changwoo Han, and Chanwoo Kim. Conformer-based on-device streaming speech recognition with kd compression and two-pass architecture. In *2022 IEEE Spoken Language Technology Workshop (SLT)*, pages 92–99, 2023.

[C3] 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 *INTERSPEECH 2020*, pages 3371–3375, 2020.

[C2] 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, and Chanwoo Kim. Attention based on-device streaming speech recognition with large speech corpus. In *2019 IEEE Automatic Speech Recognition and Understanding Workshop (ASRU)*, pages 956–963, 2019.

[C1] 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 *2019 IEEE Automatic Speech Recognition and Understanding Workshop (ASRU)*, pages 92–99, 2019.

HONORS AND AWARDS

- **Employee of the Year** *2022*
  Samsung Electronics, Korea
  ◦ Awarded to the top 0.02% out of 50,000 employees in recognition of their dedication and accomplishments.
- **Full Scholarship for all semesters at Seoul National University** *2013 - 2018*
  Seoul National University

INVITED TALK

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

SKILLS

- **Programming Languages:** Python (Machine Learning Frameworks), C++, Java
- **Languages:** Fluent in Korean, Chinese and English
- **Soft Skills:** Leadership, Creativity, Independence, Problem-solving, Communication Skills
- **Multi-cultural:** Have both Korean and Chinese backgrounds