

# Sichen Jin (Eunhyang Kim)

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## EXPERIENCE

- **Samsung Research** 01/2018 - Current  
*Speech AI Researcher, Speech Intelligence Team* Seoul, Korea
- **IBM Korea** 12/2017 - 01/2018  
*Intern, Watson Delivery 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

- **Custom Wake-up Word: 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
  - Implemented the inference code for the model in plain C for further development on DSP board
- **Cross-modal Contextual Biasing: Internal Language Model Estimation for Speech 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 speech model using text-only data, and discovered that the subnetwork designed to convey linguistic information do not work 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 Delivery 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, Seungiin 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, 2022.
- [C3] Abhinav Garg, Gowtham Vadiseti, 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.

## INVITED TALK

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

## HONORS AND AWARDS

- **Employee of the Year** 2022  
Samsung Electronics, Korea
  - Awarded to the top 0.2% out of over 50,000 employees in recognition of their dedication and accomplishments.
- **Full Scholarship for all semesters at Seoul National University** 2013 - 2018  
Seoul National University

## SERVICES

- **Social Coordinator, Speech Intelligence Team** 01/2022 - 12/2022  
Samsung Research
  - Organized various gathering events for bring people together and get feedbacks for better work culture
  - Hosted a social event after Interspeech 2022 at Incheon, Korea for researchers from within and outside the company

## 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