Soohwan **Kim**

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"Let's be better than yesterday"

Education

Kwangwoon University   *Seoul, South Korea*

SENIOR STUDENT IN ELECTRONIC AND COMMUNICATION ENGINEERING DEPT, MINOR IN DATA SCIENCE   *Mar. 2014 - Feb. 2021 (Expected)*

- Major GPA of 3.89 / 4.5, Total GPA of 3.69 / 4.5

Work Experience

Spoken Language Lab (of Sogang University)   *Sogang University, Seoul*

UNDERGRADUATE RESEARCHER   *Apr. 2020 - Present*

- Open Source Project for Character-based Korean End-to-End Automatic Speech Recognition.
- Make Interactive User Interface Introductory Lecture Note
- DNN-based Acoustic Model Research
- Kaldi Open Source Speech Recognition Toolkit Research

Republic of Korea Marine Corps   *Republic of Korea*

SIGNAL MAN   *Sep. 2015 - Jun. 2017*

- Served at Armored Battalion Headquaters
- Won the 1st prize in 2015 Division Communication Competition

Project Experience

Korean-English Speech Translation System

TEAM LEADER   *Jul. 2020 - Present*

- The goal is to establish a speech translation system combining speech recognition and machine translation technology.
- Implement Transformer model proposed in "Attention Is All You Need" *Related Link*
- Interworking of Speech Recognizer and Machine Translator

KoSpeech

TEAM LEADER   *Oct. 2019 - Present*

- Open Source Project for Character-based Korean End-to-End Automatic Speech Recognition
- Using a Korean Speech corpus opened in AI Hub.
- Recorded the performance of the model at **10.31** CER (Character Error Rate) with sampled test data.
- Preprocess of AI Hub corpus by method designed by self.
- Got more than **50 stars** on the GitHub site. *Related Link*

2019 Naver A.I Hackathon - Speech

TEAM LEADER   *Sep. 2019 - Oct. 2019*

- **Ranked 12/100** in Korean speech recognition competition hosted by Naver. (2nd ranked in undergraduate)
- Using 100 hours of limited data provided by Naver
- Recorded the performance of the model at **24.67** CER (Character Error Rate).
- Improved the performance of the model through changing feature extraction, introduction of convolution layer to encoder. *Related Link*

Side Projects

AUTHOR   *Mar. 2018 - Present*

- Smart Home IoT Platform - 2020 Spring. *Related Link*
- Sequence-to-Sequence Neural Machine Translation - 2019 Winter. *Related Link*
- Review based Wine Recommendation - 2019 Fall. *Related Link*
- Correlation Analysis Program between Naver, Daum, Google Search Ranking - 2019 Fall. *Related Link*
- Correlation Analysis Program between Melon Chart and SNS References - 2019 Fall. *Related Link*
- Cloud service - 2019 Summer. *Related Link*
- TCP Multi Chatting Program - 2019 Spring. *Related Link*
- Fastfood order program - 2018 Summer. *Related Link*
- Gallaga game - 2018 Spring. *Related Link*

Research Interest

Speech Recognition

END-TO-END, HMM-DNN, KALDI

- A research on the automatic speech recognition for Korean.
- A research on the improvement of recognition in the actual environment.
- A research on the speed improvement of speech recognition
- A research on the application of End-to-End Method in real-time
- A research that distinguishes between data that is helpful for learning and data that is not helpful.

Speech Synthesis

GAN, GENERATE DATA

- A research on generate data through speech synthesis

Speaker Identification

IDENTIFICATION, VERIFICATION

- A research on speaker identification in real-time.
- A research to increase speaker verification accuracy
- Building a system that works in combination with speech recognition

Voice Activity Detection

VAD, END-TO-END

- A research on start and end point detection in real-time for End-to-End Speech Recognition.

Extracurricular Activity

Blog Posting

AUTHOR   *Aug. 2018 - Present*

- Blogging about what I've learned. (Deep Learning, Audio Signal Processing, Operating System, etc..) *Related Link*
- So far, 231 posts and an average of 100 people per day have visited.

Deep Learning Principle Study Group

GROUP MEMBER   *Jan. 2020 - June. 2020*

- Joined a study group studying basics of deep learning with mathematics.
- Implemented nodes from scratch using numpy and pandas, read papers
- Study audio signal processing.

Network Programming Study Group

GROUP MEMBER   *Jun. 2019 - Aug. 2019*

- Joined a study group studying network programming hosted by the Computer Communication Laboratory of Kwangwoon University.
- Study Data Communication, Computer Network and Network Programming.

Skills

Programming	Android, Arduino, C, C++, Java, Python, Shell, SQL
Deep Learning	Pytorch, Keras, Kaldi
Data Analysis	Numpy, Pandas, Matplotlib, Seaborn, Scikit-learn

Honors & Awards

AWARDS

2020	**School Representative**, 5G-based ICT Convergence Service Idea Contest
2019	**12 Ranked**, 2019 Naver A.I Hackathon - Speech
2019	**Finalist**, Idea Contest - Kwangwoon University software start-up idea contest - Fall
2019	**Popularity Award**, Kwangwoon University software start-up idea contest - Spring
2018	**Award for Best Practices**, Samsung Multi-Campus in Java-based Algorithm for SW Development Course

HONORS

2020	**Excellent Scholarship**, Samsong Scholarship
2019	**Academic Excellent Scholarship**, Kwangwoon University
2019	**Excellent Scholarship**, Samsong Scholarship
2018	**Academic Excellent Scholarship**, Kwangwoon University
2018	**Academic Excellent Scholarship**, Kwangwoon University