



# Soohwan Kim

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"Let's be better than yesterday"

## Education

### Kwangwoon University

SENIOR STUDENT IN ELECTRONIC AND COMMUNICATION ENGINEERING DEPT, MINOR IN DATA SCIENCE

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

Seoul, South Korea

Mar. 2014 - Feb. 2021 (Expected)

## Work Experience

### Spoken Language Lab (of Sogang University)

UNDERGRADUATE RESEARCHER

- 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

Sogang University, Seoul

Apr. 2020 - Present

### Object-Oriented Programming Lecture

TEACHING ASSISTANT

- Object Oriented Programming in Department of Information Convergence.
- Answers questions in person and online, marks assignments, conduct a practical exercises.

Kwangwoon University, Seoul

Mar. 2020 - Jun. 2020

## Project Experience

### Korean-English Speech Translation System

TEAM LEADER

- 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

Jul. 2020 - Present

### KoSpeech

TEAM LEADER

- 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 **50 stars** on the GitHub site. [Related Link](#)

Oct. 2019 - Present

### 2019 Naver A.I Hackathon - Speech

TEAM LEADER

- **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](#)

Sep. 2019 - Oct. 2019

### Side Projects

AUTHOR

- 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](#)
- 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](#)

Mar. 2018 - Present

## Research Interest

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### Automatic 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

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### 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

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

## Honors & Awards

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