



Soohwan Kim

AI RESEARCH ENGINEER · SOFTWARE DEVELOPER

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“Step by step goeod a long way”

Summary

Current AI Research Engineer at Kakao Brain. I majored in Electronic & Communication Engineering and minored in Data Science at university. My research interests include technologies for human-machine interaction, such as automatic speech recognition, speech synthesis, and natural language processing. I enjoy software development and sometimes like to write my knowledge or thoughts. I want to be helpful to others through open source. You can check my github (<http://github.com/sooftware>) to see what I am currently up to.

Education

Kwangwoon University

Seoul, South Korea

MAJOR B.E. IN ELECTRONIC & COMMUNICATION ENGINEERING / MINOR B.E. IN DATA SCIENCE

Mar. 2014 - Feb. 2021 (Expected)

- **Major GPA** : 3.90 / 4.5 / **Total GPA** : 3.70 / 4.5
- **Courses**: Capstone Design I-II, AI & Speech Signal Processing, Software Design, Computer Architecture, Operating System, Data Structure & Algorithm, Data Mining, Network Programming, IoT System Design, Big Data Language, Big Data Processing & Application, Database, Digital Signal Processing, Statistical application, Object-Oriented Programming, Object-Oriented Programming Practice, System Programming, C programming, Development Open-Source Software, Mobile Programming, Data Communication, Computer Network, Basic Electronic Circuit Experiment I-II, Circuit Theory I-II, Digital Logic, Physics Electronic Technology, Electronic Circuit Experiment I-II, Engineering Math I-II, Probability and Irregular Signaling Theory

Career

Kakao Brain

Pangyo, Gyunggi

AI RESEARCH ENGINEER

Nov. 2020 - Present

- Research & Develop Speech and NLP fields
- Participation in NLP library development (Named Pororo)

Kakao Brain

Pangyo, Gyunggi

RESEARCH INTERNSHIP

Aug. 2020 - Nov. 2020

- Research & Develop English, Korean and Chinese Speech Recognition models
- Multilingual Text-To-Speech model development (10 languages)

Spoken Language Lab (Sogang Univ.)

Mapo, Seoul

UNDERGRADUATE RESEARCHER

Apr. 2020 - Aug. 2020

- Research End-to-End Automatic Speech Recognition Models
- Research Real-time Speech Recognition Based on Kaldi Toolkit

Technical Blog

Naver Blog

WRITER

Aug. 2018 - Present

- Technical posting of deep learning, programming, signal processing, paper review etc.
- Having more than 100 subscribers and an average of 200 visitors a day
- [Blog Link](#)

Research Interests

Automatic Speech Recognition, Speech Synthesis, Natural Language Processing

Software Development, Software Architecture

Voice Activity Detection, Speech Enhancement, Cross-lingual

Publication

2020 End-to-End ASR Models in English, Korean and Chinese, Bachelor's Graduation Thesis

2020 KoSpeech: Open-Source Toolkit for E2E Korean Speech Recognition, arXiv pre-print

Project Experience

Multilingual Speech Synthesis

DIRECTOR

Kakao Brain

Oct. 2020 - Nov. 2020

- Development of a speech synthesis model that supports 10 languages
- Supports for Voice-Cloning and Code-Switching

English, Korean and Chinese ASR Models Development

DIRECTOR

Kakao Brain

Aug. 2020 - Oct. 2020

- Development of English, Korean and Chinese Wav2vec 2.0 Models
- Experiment for improving the speed of inference
- Comparative experiment on accuracy / inference speed by output-unit such as Character, Grapheme and Subword

KoSpeech

TEAM LEADER

Kwangwoon University

Jan. 2020 - Aug. 2020

- Open-Source Toolkit for End-to-End Korean Speech Recognition
- Recorded the performance of the model at **10.31** character error rate
- Got more than **100 stars** on the GitHub site.
- [GitHub](#) / [Technical Report](#)

Extracurricular Activity

NLP Paper Reading

GROUP MEMBER

Kakao Brain

Sep. 2020 - Present

- Kakao Brain Natural Language Processing Team's weekly paper reading study
- Discuss the content of the thesis and record it on [this link](#)

Deep Learning Principle Study Group

GROUP MEMBER

Kwangwoon University

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.

Speech Recognition Study Group

GROUP MEMBER

Kwangwoon University

Jan. 2020 - Mar. 2020

- Study speech signal processing (Spectrogram, Mel-Scale, MFCC etc ..)
- Review of the paper on speech recognition record it on [this link](#)

Skills

Programming	Python, Java, C/C++, Shell Script, SQL, Android, Arduino, Assembly, HTML
Deep Learning	PyTorch, Fairseq, PyTorch Lightning
Data Analysis	Numpy, Pandas, Matplotlib, Seaborn, Scikit-learn, NLTK

Honors & Awards

AWARDS

- 2020.11 **1st Place**, Kwangwoon Engineering Festival (President's Award)
- 2020.11 **People's Choice Award**, Kwangwoon Engineering Festival
- 2019.10 **12th Place**, Naver A.I Hackathon - Speech
- 2019.09 **Finalist**, Kwangwoon University software start-up idea contest - Fall
- 2019.04 **People's Choice Award**, Kwangwoon University software start-up idea contest - Spring
- 2018.08 **Excellence Award**, Samsung Multi-Campus in Java-based Algorithm for SW Development

HONORS

- 2020.01 **School Representative**, 5G-based ICT Convergence Service Idea Contest
- 2020.03 **Excellent Scholarship**, Samsung Scholarship
- 2019.03 **Excellent Scholarship**, Samsung Scholarship
- 2019.03 **Academic Excellent Scholarship**, Kwangwoon University
- 2018.09 **Academic Excellent Scholarship**, Kwangwoon University
- 2018.03 **Academic Excellent Scholarship**, Kwangwoon University