



Soohwan Kim

AI RESEARCH ENGINEER · SOFTWARE ENGINEER

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“Who likes to play with codes”

About Me

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 page (<http://github.com/sooftware>) to see what I am currently up to.

Education

Kwangwoon University

Seoul, South Korea

MAJOR IN ELECTRONIC & COMMUNICATION ENGINEERING / MINOR IN DATA SCIENCE

Mar. 2014 - Feb. 2021 (Expected)

- **Major GPA** : 3.90 / 4.5 / **Total GPA** : 3.69 / 4.5
- **Major Courses**: Capstone Design I-II, AI & Speech Signal Processing, Software Design, Machine Learning, 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, Open-Source Software, System Programming, C programming, Mobile Programming, Data Communication, Computer Network, Basic Electronic Circuit Experiment I-II, Electronic Circuit Experiment I-II, Electronic Circuit Theory I-II, Digital Logic, Physics Electronic Technology, Engineering Math I-II, Probability and Irregular Signaling Theory, Probability and Statistics

Professional Experience

Kakao Brain

Pangyo, Gyeonggi

AI RESEARCH ENGINEER

Nov. 2020 - Present

- Research & Develop Speech and Natural Language Processing fields
- Develop Natural Language Processing toolkit used to conduct various NLP tasks (e.g. ASR, NMT, TTS, ..., etc.)

Kakao Brain

Pangyo, Gyeonggi

INTERNSHIP

Aug. 2020 - Nov. 2020

- Research & Develop English, Korean and Chinese Automatic Speech Recognition models
- Development of Multilingual Speech Synthesis Model with Support for 10 Languages

Spoken Language Lab (of Sogang Univ.)

Mapo, Seoul

UNDERGRADUATE RESEARCHER

Apr. 2020 - Aug. 2020

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

Research Interests

- Speech** Speech Recognition, Speech Synthesis, Voice Activity Detection, Speech Enhancement, Speech Separation
- NLP** Dialogue System, Machine Translation, Language Model, Cross-lingual
- Software** Software Architecture, Object-Oriented Programming, Data Structure, Algorithm

Skills

- Programming** Python, Java, C/C++, Shell Script, SQL, Android, Arduino, Assembly, HTML
- Deep Learning** PyTorch, Tensorflow, Keras, Fairseq, Transformers, PyTorchLightning, Wav2letter, Faiss, Hydra
- Data Analysis** Numpy, Pandas, Matplotlib, Seaborn, Scikit-learn, BeautifulSoup, Selenium, NLTK

Publication

- 2021 **KoSpeech: Open-Source Toolkit for End-to-End Korean Speech Recognition**, ELSEVIER, SIMPAC
- 2020 **End-to-End Speech Recognition Models in English, Korean and Chinese**, Bachelor's Graduation Thesis

Project Experience

Pororo: A Deep Learning based Multilingual NLP Library

TEAM MEMBER

Kakao Brain

Sep. 2020 - Present

- Libraries that focus on performing natural language processing tasks [link]
- Maintainer of speech tasks. (ASR, TTS, ST, S2S)

KoSpeech: Open-Source Toolkit for End-to-End Korean Speech Recognition

AUTHOR

Github

Jan. 2020 - Present

- Modular and extensible end-to-end Korean automatic speech recognition (ASR) toolkit
- Currently, over hundreds people are stargazer this project [link]

Deep Learning Model Implementation

AUTHOR

Github

Jan. 2020 - Present

- Speech Recognition : DeepSpeech2, Listen-Attend-Spell, RNN-T, Speech-Transformer, Jasper, Conformer
- Speech Synthesis : Tacotron2, Multilingual-Tacotron2
- Natural Language Processing : RNN-LM, Seq2seq, Transformer

Extracurricular Activity

Speech Paper Reading

GROUP MEMBER

Study

Dec. 2020 - Present

- Weekly meeting where people who work in the field of Speech gather and read papers.
- Reading a paper and summarizing its contents [link]

NLP Paper Reading

GROUP MEMBER

Study

Sep. 2020 - Present

- Kakao Brain Natural Language Processing Team's weekly paper reading study
- Reading a paper and summarizing its contents [link]

Technical Blog

WRITER

Blog

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 [link] [link]

Teaching Experience

Samsung AI Expert Course - Speech Recognition

TEACHING ASSISTANT

Spoken Language Lab

Jul. 2020 - Aug. 2020

- Conducted Teaching Assistant role in the Speech Recognition session

Object-Oriented Programming Practice

TEACHING ASSISTANT

Kwangwoon University

Mar. 2020 - Jun. 2020

- Covered basic JAVA programming, Ran laboratories and had office hours every week.
- Answered students' questions in person and marked assignments

Awards & Honors

AWARDS

- 2020.11 **1st Place, People's Choice Award**, Kwangwoon Engineering Festival (President's Award)
- 2019.10 **Finalist (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 **Best Award**, Samsung Multi-Campus in Java-based Algorithm for SW Development

HONORS

- 2020.03 **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