Soohwan **Kim**

AI Research Engineer · Software Developer

11 F, 20, Pangyoyeok-ro 241 beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, 13494, Korea

(+82) 10-4564-4668 | sh951011@gmail.com | sooftware.github.io | sooftware | Soo-hwan

"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** : 3.70 / 4.5
- **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, Gyunggi*
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, Gyunggi*
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
NLP   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, Fairseq, PyTorch Lightning, Wav2letter, Kaldi
Data Analysis   Numpy, Pandas, Matplotlib, Seaborn, Scikit-learn, BeautifulSoup, Selenium, NLTK

Publication

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

Project Experience

Multilingual Speech Synthesis
Kakao Brain

REPRESENTATIVE
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
Kakao Brain

REPRESENTATIVE
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: Open-Source Toolkit for End-to-End Korean Speech Recognition
Kwangwoon University

AUTHOR
Jan. 2020 - Aug. 2020

- Currently, over **100** people are stargazer this project [link]
- Write Technical Reports in arXiv [link]

Extracurricular Activity

NLP Paper Reading
Kakao Brain

GROUP MEMBER
Sep. 2020 - Present

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

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 [link]

Speech Recognition Study Group
Kwangwoon University

GROUP MEMBER
Jan. 2020 - Mar. 2020

- Study speech signal processing (Spectrogram, Mel-Scale, MFCC etc ..)
- Reading a paper of speech recognition and recording its contents [link]

Teaching Experience

Samsung AI Expert Course - Speech Recognition
Spoken Language Lab

TEACHING ASSISTANT
Jul. 2020 - Aug. 2020

- Conducted Teaching Assistant role in the Speech Recognition session

Object-Oriented Programming Practice
Kwangwoon University

TEACHING ASSISTANT
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 Representace,** 5G-based ICT Convergence Service Idea Contest
2020.03 **Excellent Scholarship,** Samsong Scholarship
2019.03 **Excellent Scholarship,** Samsong Scholarship
2019.03 **Academic Excellent Scholarship,** Kwangwoon University
2018.09 **Academic Excellent Scholarship,** Kwangwoon University
2018.03 **Academic Excellent Scholarship,** Kwangwoon University