



# Cheolhwang Won

☎ (+82) 10-2639-0065 | ✉ wch18735@naver.com | 📷 wch18735

*"As long as the direction is correct, it's all right to be a little slow"*

## Education

### Kwangwoon University

MAJOR IN ELECTRONIC COMMUNICATION AND ENGINEERING DEPT

- Major GPA of 4.19/4.5 (Total GPA of 4.21/4.5)

Seoul, S.Korea

Mar. 2015 - Feb. 2021 (Expected)

### Gapyeong High School

NATURAL SCIENCE

- Member of 1st Gapyeong High School Korean Traditional Archery club
- Dormitory president of 2nd grade

Gapyeong, S.Korea

Mar. 2011 - Feb. 2014

## Work Experience

### Republic of Korea Army

CAPITAL MECHANIZED INFANTRY DIVISION, THE 5273 BATTALION, ARTILLERY

- Served as squad leader in K55 and K55A1 self-propelled artillery
- VII Corps "Vanguard of Northern advance" Squad Leader Education Center completion as a top rank
- Discharged as a sergeant

Republic of Korea

Mar. 2016 - Oct. 2017

## Project Experience

### Korean-English Speech Translation System

TEAM MEMBER

Jul. 2020 - Present

- Speech translation system in the sequence of Korean speech recognition system, machine translation technology, and speech synthesis
- Signal Processing to extract optimal Spectrogram, Mel-Spectrogram, MFCC, etc.
- Interlocking machine translator and voice synthesizer

### KoSpeech

TEAM MEMBER

Oct. 2019 - Present

- Open source project for character-based Korean end-to-end automatic speech recognition.
- Using a Korean speech corpus, KsponSpeech, opened in AI Hub.
- Recorded model performance of 10.31% CER(Character Error Rate) with sampled test data
- [Related](#)

### 2019 Naver A.I Hackathon - Speech

TEAM MEMBER

Sep. 2019 - Oct. 2019

- Ranked 12/100** in Korean speech recognition competition hosted by Naver Corp. (2nd ranked, only considering undergraduated teams)
- Recorded model performance of **24.67%** CER(Character Error Rate)
- Various Hyper-parameter optimizing experiment

### KWIX - Kwangwoon ICT exhibition

TEAM MEMBER

Jun. 2019 - Sep. 2019

- Object detection task on Jetson TX2 and Raspberry Pi
- Use YOLOv3 and experiment for improving performance by changing dataset and reducing label classes, lessen CNN layer, etc.

### Gwang Mat - an restaurant ranking program

TEAM LEADER

Jun. 2019 - Sep. 2019

- Java-based Algorithm Process for SW Development - Samsung Multicampus
- To make ER diagram and a query to manage DB

### Launch-Pad

TEAM LEADER

Mar. 2018 - Jun. 2018

- Development a launchpad on Windows console
- Used FMOD library and Multi-Thread in C++

## Personal Projects

AUTHOR

Mar. 2018 - Present

- Multi-User Chatting Program with Multiprocess, Multithread, Select - 2020, Spring
- Estimate of probability of 2020 South Korean legislative election with R - 2020, Spring
- Bubble Sorting and Selection Sorting with Assembly language - 2020, Spring

## Research Interest

---

### Sound Signal Analysis

ANALYSIS SOUND SIGNAL FROM SPEECH OR INSTRUMENT USING VARIOUS FEATURE

- Integrate audio dataset with various format to fit in model
- Extract feature optimal to each specific model from data
- Experiment with various audio feature for various task

### Speech Recognition

AUTOMATIC SPEECH RECOGNITION WITH DEEP-LEARNING MODEL

- Accurate recognition of sentences that are spoken about random topics
- Improve performance for highly noise mixed audio data
- Improve speed of End-to-End speech recognition model training

### Speech Synthesis

DEVELOPMENT OF PERSONALIZED VOICE SYNTHESIZER

- Improve intelligibility and naturalness of synthesized speech
- Develop speech synthesize deeplearning models that can be learned with less data
- Improve training speed of synthesis model

### Software Development

VARIOUS MACHINE LEARNING TASK, ALGORITHMS

- Development of Stock Price Forecasting Model Using Deep Learning
- Algorithm problem solving on online

## Extracurricular Activity

---

### SKT Talk(ON) Seminar

ATTENDEES

May. 2020 - Sep. 2020

- Audio Classification and Speech Recognition Using Deep Learning
- Speech synthesis using deep learning

### Speech Recognition Project Study Group

GROUP MEMBER

Jan. 2020 - Mar. 2020

- Reviewing speech recognition papers about model architecture, data augmentation, etc.
- [Related](#)

### DITTO - C/C++ Mentor and Mentee Program

MENTOR

Mar. 2019 - Jun. 2019

- Tutoring pointer, File I/O, Concept of Class
- To make a quiz and algorithm problem

### KAIG - Kwangwoon AI Group

GROUP MEMBER

Dec. 2018 - Jun. 2019

- Study group that learn from basic machine learning to deep learning
- Main goal: to make own NLP model

### FC.Bekwang: College of Electronics and Information Engineering Football Club

CLUB LEADER

Jan. 2019 - Dec. 2019

- Tutoring MF movement and dribble for freshman
- Taking a plan to match with other team

## Skills

---

<b>Proficient</b>	C/C++, Python
<b>Intermediate</b>	R, Raspberry Pi, Arduino, JAVA
<b>Beginner</b>	Assembly, SQL
<b>Deeplearning</b>	PyTorch
<b>Language</b>	Korean, English(Intermediate High, OPIc)

# Honors & Awards

---

## HONORS

- 2020 **National Science & Technology Scholarship**, Ministry of Science and ICT, Spring Semester
- 2019 **National Science & Technology Scholarship**, Ministry of Science and ICT, Fall Semester
- 2019 **National Science & Technology Scholarship**, Ministry of Science and ICT, Spring Semester
- 2018 **Academic Excellence Scholarship**, Kwangwoon University, Fall Semester
- 2016 **Academic Excellence Scholarship**, Kwangwoon University, Fall Semester
- 2015 **Academic Excellence Scholarship**, Kwangwoon University, Fall Semester

## AWARDS

- 2019 **Excellence Award**, 5G-based ICT Convergence Service Idea Contest - KICS, SKT
- 2019 **12th Ranked**, 2019 Naver A.I Hackathon - Speech
- 2019 **Finalist**, Software Startup Idea Contest - Kwangwoon University - Fall
- 2019 **Popularity Award**, Startup Idea Contest - Kwangwoon University - Spring
- 2018 **Grand Award**, TRIZ Design Thinking Contest - Kwangwoon University - Fall