



# Jongmoon Ryu

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“The people who are crazy enough to think they can change the world are the ones who do.”

## Education

### Gachon University

B.S. IN SOFTWARE ENGINEERING

- Total GPA of 3.99 / 4.5, Major GPA of 4.21 / 4.5 (Credits taken : 98/120)

Seong-Nam, Korea

Mar. 2018 - Feb. 2025

## Experience

### 2024 Mathematics for AI

TEACHING ASSISTANT

- Assisted in teaching linear algebra and optimization theory for deep learning.
- Provided explanations for assignments and created example solutions.

Seong-Nam, Korea

Mar. 2024 - PRESENT

### LaTrobe & Monash University Lab. Internship

LABORATORY INTERNSHIP

- Learned a concept and implementation of Geospatial Database Processing using PostGIS, QGIS, Spatial SQL
- Completed two geospatial projects including analyzing the movements of the elderly in Seoul.
- Got a Runner Up Project Award 2024 within laboratory groups.
- Co-advised by Prof. Wenny Rahayu and Prof. David Taniar.

Melbourne, Australia

Jan. 2024 - Feb. 2024

### 2023 Algorithm

TEACHING ASSISTANT

- Introduction to algorithm problem-solving methods and strategies for students.
- Lectures and mentoring sessions for passing corporate coding tests.
- Grading of assignments and exams conducted during lectures.

Seong-Nam, Korea

Sep. 2023 - Dec. 2023

### ISNLP Lab, Gachon University

RESEARCH ASSISTANT

- Presentation of recent research trends in TTS (Text-to-Speech) synthesis.
- Study on speech synthesis papers enabling emotion control through labeled or referenced audio.
- Advised by Prof. Sangwoo Kang in Gachon Univ.

Seong-Nam, Korea

Sep. 2023 - Dec. 2023

### Smilegate AI Membership 3rd

AI ENGINEER & BACKEND ENGINEER

- Led a personalized custom audiobook speech synthesis project utilizing FastSpeech2 and RVC models.
- Modified the model to extract user voice features using a small amount of audio data.
- Developed using AWS instances such as Sagemaker, EC2, and RDB (Supported by MegaZoneCloud).
- Selected as an outstanding project.

Pangyo, Korea

Jun. 2023 - Nov. 2023

### SIL Lab, Gachon University

RESEARCH ASSISTANT

- Study of papers on (Knowledge) graph-based recommendation systems.
- Advised by Prof. Jaeyoung Choi in Gachon Univ.

Seong-Nam, Korea

Mar. 2023 - Jul. 2023

### Naver Boostcamp AI Tech 3rd

RECOMMENDER SYSTEM TRACK

- Studied fundamental and advanced topics in deep learning, focusing on recommender systems.
- Participated in 3 competitive projects and 1 final project on graph-based recommender systems.
- Contributed to community by writing outstanding competition posts in internal competitions.

Seoul, Korea

Jan. 2022 - Jun. 2022

### R.O.K Army, 1st Logistics Support Command

BATTLEFIELD OPERATING SYSTEM MANAGER (COMPULSORY MILITARY SERVICE)

- Revamped the unit's homepage for enhanced user convenience (from IE-based to Chrome-based).
- Identified and proposed the unit's internal network issues, leading to the completion of network infrastructure rebuilding.
- Managed server system backups and maintenance.

Wonju, Korea

May. 2020 - Nov. 2021

- Accepted to Gachon University's overseas language program in 2020 winter semester.

## Projects

### Sing To Me: Singing Voice Conversion

TEAM LEADER

Gachon Univ.

Mar. 2023 - PRESENT

- A capstone design project conducted over three semesters at Univ.
- Developed a project for changing vocal voices in music.
- Integrated the RVC model for voice conversion with the VITS model for speech synthesis.
- Utilized the UVR model to accurately separate vocals and MR, and performed voice conversion using the RVC model.

### Audio Book for kids using Personalized TTS System

TEAM LEADER

Smilegate AI Membership

Jun. 2023 - PRESENT

- A project undertaken during the Smilegate AI Membership period.
- Created audio book content based on text using a small amount of parental voice data.
- Developing a speech synthesis system incorporating emotions by extracting emotion labels from text.
- Created audiobooks using the FastSpeech2 model and performed voice conversion to parental voice using the RVC model.

### Gachon Go: An On-Campus Delivery Service

TEAM LEADER

Gachon Univ.

Mar. 2023 - Jul. 2023

- Term project conducted in the "Mobile Programming" course offered during the spring semester of 2023.
- Developed an application using Kotlin to implement a delivery system for on-campus students.
- Integrated Kakao payment system, implemented services on AWS, and incorporated real-time location services using Naver Maps API.
- Selected as an outstanding project in the entire class and presented at an department's event.

### What's In Your Closet: A Fashion Recommender System

TEAM MEMBER

Naver Boostcamp

May. 2022 - Jun. 2022

- Final project completed during Naver Boostcamp AI Tech.
- Developed a clothing recommendation service based on existing clothing using the LGCN model, a graph-based recommender system.
- Automated data collection and preprocessing processes, developed in a cloud environment using Google Cloud Platform (GCP).
- The Light GCN model identifies interaction patterns between clothing items and recommends new items.

### DKT: Deep Knowledge Tracing

TEAM MEMBER

Naver Boostcamp

May. 2022 - Jun. 2022

- Competition style project completed during Naver Boostcamp AI Tech. (2nd Place / 22 Team)
- Task involved tracking users' problem-solving history to predict future problem-solving outcomes based on their knowledge state.
- Ensemble of Decision Tree and LSTM-Attention models.
- Enhanced LSTM-Attention model to focus more on history with similar problem tags for predictions.

### Movie Recommendation

TEAM MEMBER

Naver Boostcamp

Apr. 2022 - May. 2022

- Competition style project completed during Naver Boostcamp AI Tech. (3rd Place / 25 Team)
- Recommending personalized movies to users based on their viewing history and movie attributes.
- Built a recommendation system by ensembling BERT4Rec, Multi-VAE, and S3-Rec models.

### Mask Wearing Classification

TEAM MEMBER

Naver Boostcamp

Apr. 2022 - Apr. 2022

- Competition style project completed during Naver Boostcamp AI Tech. (4th Place / 57 Team)
- Project classifying mask-wearing status during the COVID-19 era.
- Employed FaceNet, EfficientNet, and data augmentation techniques to achieve significant performance improvement.
- Implemented CutMix technique and FaceCrop methodology, yielding positive results.

## Scholars & Awards

### SCHOLARS

2024	<b>International Internship Program</b> , 2024 Winter semester internship at LaTrobe and Monash University	SW Centric Univ.
2024	<b>Academic Excellence</b> , Awarded to students with high achievements throughout the semester (Fall)	Gachon Univ.
2023	<b>Academic Excellence</b> , Awarded to students with high achievements throughout the semester (Spring)	Gachon Univ.
2020	<b>Academic Excellence</b> , Awarded to students with high achievements throughout the semester (Fall)	Gachon Univ.
2019	<b>Academic Excellence</b> , Awarded to students with high achievements throughout the semester (Spring)	Gachon Univ.
2019	<b>Exchange student</b> , Language course at United Kingdom	Gachon Univ.

### AWARDS

2024	<b>2nd Place</b> , Analyzing the movements of the elderly in Seoul	LaTrobe Univ.
2023	<b>Excellence Prize</b> , Gachon Univ. Department of AI Software's Day Event 2024 (Open Source)	Gachon Univ.
2023	<b>Excellence Prize</b> , Gachon Univ. Department of AI Software's Day Event 2024 (Mobile Programming)	Gachon Univ.
2018	<b>1st Place</b> , Gachon Han-maum Programming Contest	Gachon Univ.

## Extracurricular Activity

<b>GDSC(Google Developer Student Club) Gachon</b>	Seong-Nam, Korea
MEMBER	Jun. 2023 - PRESENT
<ul style="list-style-type: none"> <li>Participated in a study on emotion embedding in natural language processing.</li> </ul>	

<b>Payload</b>	Seong-Nam, Korea
MEMBER & CORE MEMBER FOR ALGORITHM PART	Sep. 2018 - Dec. 2019
<ul style="list-style-type: none"> <li>Learned web hacking and reverse engineering.</li> <li>Led algorithm study group as a study group leader for one year, conducting algorithm lectures.</li> </ul>	

## Skills

<b>Languages</b>	Korean(native), English(intermediate), Japanese(intermediate)
<b>Programming</b>	Python, JAVA, C/C++, LaTeX
<b>Frameworks</b>	PyTorch
<b>DevOps</b>	AWS, Docker

## Others

<b>TOEIC</b>	840
<b>Certificate</b>	SQLD (SQL Developer)
<b>Algorithm</b>	Baekjoon Online Judge 1780 solved