

# Seungjun Lee

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## EDUCATION

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**Yonsei University, Seoul**

B.S. in Artificial Intelligence

March 2022 - Present

GPA: 4.03/4.3 (**Major: 4.20/4.3**)

## RESEARCH INTERESTS

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- **Deep Learning for Medical Application**
- Multimodal learning (Language-Guided Vision)
- Generative model
- 3D

## AI EXPERIENCES

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**Yonsei Medical Imaging Lab**

Oct 2023 - Present

*Undergraduate Research Intern (Advisor: [JongDuk Baek](#))*

- Explored the principles and concepts of medical imaging processes and developed Python codes to present them.
- Implemented CT denoising and resolution models such as RED-CNN, HCflow, and ESRGAN.
- Participated in a graduate study that reviewed latest CV papers.
- Researching on fine-tuning Random-Dose CT Reconstruction model with RLHF technique by using trained Perceptual Image Quality Assessment model that outperforms PSNR and SSIM.

**Yonsei Medical Scientist Training Program**

January 2024, July 2024

*Member*

- Participated in workshop where the doctors discussed several cases demonstrating how AI improved diagnostic capabilities.
- Discussed medical issue with Yonsei medical students and collaborated to address specific issues by developing AI solution.
- Researched the topic 'Detection and Risk Measurement of Silent Atrial Fibrillation in ECG Using Diverse AI techniques' to detect the risk of heart diseases from ECG data. Processed the dataset using FFT transformation and ensembled several CNN models. More information can be found in the slide link. ([Presentation slides](#))
- Researched the topic 'Predicting Disease Probabilities Using a Single Gait Data Type Through Deep Learning' to predict neurological disorder from single Gait data. Processed three different gait datasets using various preprocessing techniques such as FFT, linear interpolation to remove gravitational acceleration bias, and truncation for medical reasons. Developed a stacking ensemble algorithm with EfficientNet, Bi-LSTM, and RBF kernel SVM. More information can be found in the slide link. ([Presentation slides](#))

**Yonsei Big Data Club (YBIGTA)**

December 2023 - Present

*Member*

- Participated in the Kaggle 'PlantTraits2024' ([link](#)), 'Skin Cancer Detection with 3D-TBP' ([link](#)) competitions that the tasks involved predicting plant traits using crowd-sourced plant images and ancillary data, and detecting patient has one of the such possible skin cancer from the patient's 3D-TBP images. Developed CNN, Swin Transformer, and XGBoost Regressor models.
- Developed an AI solution to classify users' MBTI types through interactions with an AI chatbot within up to five exchanges. Developed chatbots, each chatbot represent one of the four MBTI personality

types(persona).

- Developed an AI solution to classify YouTube videos into user-defined categories by using web scraping and the YouTube API to extract key video information for input into the model. This project 'YourTube', is a Chrome extension designed to recommend better videos based on user's subscriptions and videos data.
- Read various papers in the reading group.
- Developed a sticker generation model by training a diffusion model using DPO, which creates fancy stickers based on input images and text.

#### Others

September 2023 - Present

- Built a dataset of electronic devices with various damage types for segmentation(hand-made) and classification(using web-scraping and Stable Diffusion) to identify the condition of devices in photos. Developed the models that segment device screens and determine the presence of damage. ([link](#))
- Studied mathematical proof of DDPM, old RL algorithms.
- Developed a web platform that visualizes multi-dimensional evaluations of companies based on recent news articles and financial statements. (AWS project)

## SCHOLARSHIPS & AWARDS

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#### Honors

August 2023

#### Work-Study Scholarship from the SW-Centered University Project

August 2023 - Present

- Tutoring and Internship

#### AWS X Yonsei Cloud Winter Camp 2023 Summer, 3rd place

December 2023 - February 2024

- AWS & Yonsei collaborated coding camp ([link](#))
- 30 participants

#### Winter ECG Challenge 2023, 2nd place

January 2024

- Held by Yonsei Medical Scientist Training Program ([link](#))
- 10 teams and 60 participants

#### YBIGTA Conference 2024 Summer, 1st place

June 2024

- Yonsei Big Data Club Conference ([link](#))
- 10 teams

## EXTRACURRICULAR

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#### Yonsei Artificial Intelligence Football & Basketball Team (A.I.DA)

August 2022 - Present

*Captain*

- Established Artificial Intelligence department's football and basketball team, named A.I.DA.
- Participated in University-wide Sports Championship (President's Cup) for soccer, and basketball every year.
- Promoted competition events such as Engineering College Cup with other departments' captains and members of the student council.
- Consists of more than 50 members.

#### Yonsei Tutoring

June 2023 - Present

*Tutor*

- Tutored college juniors about 'Engineering Mathematics 1&2', 'Probability and Statistics', 'ML and DL', 'Coding DL with Pytorch'.

#### Yonsei Billiard Club (YBC)

March 2023 - February 2024

*Committee*

- Played billiard and promoted club events.

- Participated in billiard competition, and won 1st place with high-run(the highest consecutive score) award.

### **Yonsei Artificial Intelligence LoL World Championship**

December 2023, July 2024

*Member*

- Participated 1st, 2nd Yonsei Artificial Intelligence LoL World Championship, and won 1st place in both.

## **SKILLS**

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**Programming Languages:** C/C++ , Python(Pytorch), Web programming languages (HTML, CSS, Javascript), MATLAB, SQL

**Languages:** Korean, English

**Hobbies:** Playing sports such as soccer and basketball, Playing and listening to piano, Playing chess

## **MOTTO**

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**Smile,** and the whole world will smile with you.