Seungjun Lee

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EDUCATION

Yonsei University, Seoul   March 2022 - Present

B.S. in Artificial Intelligence   GPA: 3.95/4.3 **(Major: 4.17/4.3)**
B.S. in Startup Insight (Micro)

RESEARCH INTERESTS

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

AI EXPERIENCES

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

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, 3nd 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 2023
- Yonsei Big Data Club Conference (link)
- 10 teams

EXTRACURRICULAR

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

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

Smile, and the whole world will smile with you.