

# Byungwoo Jeon

50, Sinchon-ro 28-gil, Seoul, Republic of Korea

☎ +82 10 33641362 | ✉ ipcs@korea.ac.kr | 🏠 rootyjeon.github.io/ | 🐙 github.com/rootyJeon | 🔗 linkedin.com/in/byungwoo-jeon

## Research Interest

My research goal is to build a comprehensive system of visual recognition and generation beyond the human level. To this end, I focus on (i) how to extend cognitive abilities using generative models, (ii) how to ensure prior knowledge and spatial-temporal consistency using representations of foundation models, and (iii) how to develop a robust alignment of visual and language semantics under novel tasks.

- Multi-modal Representation
- Generative Models
- Self-supervised Learning

## Education

### Korea University

B.S. in Computer Science & Engineering, Statistics (Double Major)

Seoul, Korea

Mar 2020 - Aug 2024 (Expected)

## Experience

### Algorithmic Intelligence Lab (ALINLAB), KAIST AI

Undergraduate Intern (advisor: Prof. Jinwoo Shin)

Jeongja, Korea

Mar 2023 - Current

- Researching Data Augmentation with Diffusion Models
- Researched Zero-shot Adaptation of Open-Vocabulary Segmentation

### ARCREAL

Research Intern (host: Prof. Jinwoo Shin)

Gangnam, Korea

Jan 2023 - Current

- Developed AI systems for medical equipment
- Developed Segmentation projects
- Developed Depth Estimation model with Neural Radiance Fields

### Machine Learning & Vision Lab (MLVLAB), Korea Univ. CSE

Undergraduate Intern (advisor: Prof. Hyunwoo J. Kim)

Anam, Korea

Jul 2022 - Dec 2022

- Studied Open-Vocabulary Object Detection
- Studied Human-Object Interaction (HOI)
- Participated in the government policy supporting AI challenge team
- Participated in the MLVLAB weekly group paper study (*Paper reading & Implementation*)

### M-Monstar

Full-stack Developer

Pangyo, Korea

Jul 2021 - Aug 2021

- Developed a modular e-commerce management platform page using Laravel framework
- Optimized and debugged the site, HAGO

## Honors & Awards

### K-Data Science Hackathon

Siheung, Korea

Second-Place (2<sup>th</sup> / 200)

Nov 2023

- Award by the chairman of Korea Research Foundation, Prize 3,000,000 won
- Developed a multi-stage time-series forecasting model for predicting school-age population

### Artificial Intelligence Grand Challenge

Seoul, Korea

Top 9 (8<sup>th</sup> Prize)

Oct 2022 - Dec 2022

- Developed AI for supporting the government policies based on natural language processing
- Developed query parser for pre-processing

## Training

### LG Aimers

Remote

Completion

Jan 2024 - Feb 2024

### Yonsei-NAVER CLOUD Data Science Course

Seoul, Korea

Completed financial engineering course

Feb 2021 - Jun 2021

### United Collegiate Programming Contest

Seoul, Korea

3 Problems solved

Jul 2021

## Skills

**Programming** Python (PyTorch, TensorFlow), C, C++, SQL, PHP, Javascript, R, SAS

**Miscellaneous** Linux, Firebase, Git,  $\text{\LaTeX}$

## Extracurricular Activity

### KUBIG

Member

Jul 2023 - Jan 2024

- Lectured Mathematics and Statistics for Deep Learning
- Developed personalized animated-video service using diffusion models
- Participated in Computer Vision and Time Series Seminar
- Participated in Stochastic Optimization Session (2024 Winter) of Professor Sungbin Lim, Korea Univ.
- Participated as a pacemaker in Deep Learning Session (2023 Summer) of Professor Sungbin Lim, Korea Univ.

### Google Developer Student Clubs

Lead & Founder

Jul 2022 - Aug 2023

- Lectured Machine Learning, Databases, and Algorithm courses for undergraduate students
- Developed stable diffusion crawling with text summarization project
- Developed Horang-Studio, personalized AI profile service using diffusion models
- Developed 2024 Google Solution Challenge project (Recovery)
- Developed 2023 Google Solution Challenge project (digiHow)
- Lead three teams to the Global Top 100 in 2023 Google Solution Challenge
- Lead one team to the Global Top 10 in 2023 Google Solution Challenge
- Host of 2023 East Asia GDSC Global Hackathon in Tokyo

### Korea Computer Science Academy (Academy club in Korea Univ.)

Member & Instructor

Mar 2020 - Mar 2022

- Lectured Data Structure course for undergraduate students
- Lectured C Programming course for undergraduate students

## Languages

**English** Professional proficiency

**Korean** Native proficiency

# Coursework

---

2020-1	<b>Fundamentals of Data Science</b>	
2020-2	<b>Computer Programming</b>	
2020-2	<b>Probability and Statistics</b>	
2020-2	<b>Data Structure</b>	
2021-1	<b>Algorithm</b>	
2021-1	<b>Theory of Computation</b>	
2021-1	<b>Discrete Mathematics</b>	
2021-1	<b>Linear Algebra</b>	
2021-2	<b>Databases</b>	<i>A+, Second-place</i>
2021-2	<b>Computer Network</b>	
2021-2	<b>Computer Architecture</b>	
2022-1	<b>Statistical Mathematics</b>	
2022-1	<b>Introduction to Probability Theory</b>	
2022-1	<b>Operating Systems</b>	
2022-1	<b>Artificial Intelligence</b>	<i>A+</i>
2022-2	<b>Machine Learning</b>	<i>A+</i>
2022-2	<b>Deep Learning</b>	<i>A+</i>
2022-2	<b>Regression Analysis</b>	
2022-2	<b>Mathematical Statistics</b>	
2022-2	<b>Probability and Random Process</b>	
2023-1	<b>Mathematical Analysis</b>	
2023-1	<b>Natural Language Processing</b>	<i>A+</i>
2023-1	<b>Computer Vision</b>	<i>A+</i>
2023-1	<b>Statistical Data Science</b>	<i>A+, First-place</i>
2023-2	<b>Numerical Analysis</b>	<i>A+</i>
2023-2	<b>Introduction to Bayesian Statistics</b>	<i>A+</i>
2024-1	<b>Multivariate Statistical Analysis</b>	
2024-1	<b>Advanced Machine Learning</b>	