

Kim Jisoo

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| [Personal Website](#) | [GitHub](#) |

RESEARCH INTERESTS

Deep Learning based Machine perception understanding including:

Multi-modal Learning, Representation Learning, Data efficient Learning, and Data Augmentation

EDUCATION

Ewha Womans University

Bachelor of Computer Science

Mar. 2018 – Mar. 2023

Seoul, Korea

- CGPA: 3.76/4.3, Major GPA: 3.86/4.3, *Magna Cum Laude*
- Academic Excellence Scholarship (full-tuition scholar during 4 years)

Columbia University

Master of Computer Science

Aug. 2023 – Dec. 2024

New York, USA

PUBLICATIONS

(Equal contribution are denoted by “*”.)

⟨ International ⟩

[1] Moon Ye-Bin, **Jisoo Kim**, H. Kim, K. Son, and T.-H. Oh, ”TextManiA: Enriching Visual Feature by Text-driven Manifold Augmentation,” ICCV, 2023.

⟨ Domestic ⟩

[2] D. Kang*, **Jisoo Kim***, D. Kim, H. Kim, C. Ki-Jun “Grape Grade Discrimination System using Step-by-Step Deep Learning Model and Drone Path Planning Algorithm”, *Korean Institute of Information Scientists and Engineers: KIISE*, 2021.

RESEARCH EXPERIENCE

Algorithmic Machine Intelligence Lab, POSTECH

External Research Participant (Advisor : Prof. TaeHyun Oh)

Jul. 2022 - Present

Pohang, Korea

- Researched on Text-driven Visual Augmentation, paper submitted for CVPR 2023.
- Validated research hypothesis by designing experiments such as text-guided image editing and text embedding visualization with dimensionality reduction methods.
- Implemented baseline and conducted a comparison experiment on long-tail classification, achieved 11.54% accuracy gain in tail classes compared to the baseline.

NuviLab, Inc.

AI Software Engineer Intern

Jan. 2022 – Jun. 2022

Seoul, Korea

- Researched on Zero-Shot Classification model that leverages Vision-Language representation.
- Re-implemented CLIP and DeepSORT in Pytorch Lightning to classify 2,000+ food categories in image and videos.
- Proposed new loss measurement method in CLIP and enhanced food classification performance by 4.9%
- Managed over 140k images by building automated synchronizing system between AWS S3 and local database and adapted an anomaly detection system; used AWS lambda, fast api and MySQL.
- Built multi-conditional validation set sampling API and analyzed domain gap problem between train data sources.

Computer Vision Lab, POSTECH

Undergraduate Research Intern (Advisor : Prof. Jaesik Park)

May 2021 – Sep. 2021

Pohang, Korea

- Researched on Generative Model and Representation Learning.
- Implemented ‘Repurposing GANs for One-shot Semantic Part Segmentation’ in PyTorch and extended to an ablation study on other tasks and dataset. [\[Github\]](#)

PROJECTS

GGDS: Generalizable Grape Development System

Sep. 2021 – Jun. 2022

Project Leader, AI Engineer

Seoul, Korea

- Built an intelligence system for grape farms that provides grape grading, yield management, and grape thinning assistance service; technologies consists drone autonomous driving, detection, tracking, segmentation.
- Consolidated a feature extractor and a regression model to estimate total number of berries including occluded ones from a monocular image.
- Introduced and presented as best practice at the UIC Barcelona (Universitat Internacional de Catalunya).

AWS CIC Challenge

Nov. 2021 – May 2022

AI Software Researcher & Engineer

Seoul, Korea

- Constructed leaf segmentation system and calculated the leaf area to build database for perilla leaf farming; applied them to local farms in Geumnsan, Korea.
- Provincial government project, funded by the Geumsan county.

Naver AI BoostCamp

Jul. 2021 – Dec. 2021

AI Engineer

Seoul, Korea

- Implemented custom CutMix module and improved performance by 3% for trash semantic segmentation model.
- Developed diary application for companion animals using Multimodal Model CLIP; Generated diary text by classifying emotion, action, and locations from pet photos.

Junction X Seoul AI Hackathon

May 2021

AI Software Engineer

Seoul, Korea

- Segmented major facilities (i.e. building, road) from satellite images and adapted proposal algorithms including building clustering and road adjacency measurement to establish a location proposal model for fire stations. [\[Github\]](#)

AWARDS & HONORS

Gold Prize, Graduation Project Competition, Ewha Womans University

May 2022

2nd Place, Smart Farm AI Challenge, Ministry of Agriculture, Food, and Rural Affairs, Korean Gov.

Mar. 2022

Best Poster Award, Graduation Project Competition, Ewha Womans University

Nov. 2021

2nd Place, SW Startup Competition, Ewha Womans University

Nov. 2021

Finalist in Animal Datathon Korea, Ministry of Agriculture, Food, and Rural Affairs, Korean Gov.

Aug. 2021

2nd Place, JunctionXSeoul AI Hackathon, Junction Korea

May 2021

ADsP certificate, Advanced Data Analytic Semi-Professional certified by Korea Data Agency

Mar. 2021

Dean's List, every eligible quarter

2020 – 2021

EXTRA

Technical Skills

Advanced: Python, PyTorch, Pytorch Lightning, Java, C/C++, Git, SQL, Linux, PHP

Moderate: AWS EC2, AWS S3, AWS Cloudwatch, L^AT_EX, FastAPI

Languages: Korean (native fluency), English (full-professional proficiency), Spanish (limited working proficiency)

Theater Troupe: Led 50+ members as a president, participated as actress and director.