Jaeeun Lee

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Education

Yonsei University Mar 2022 – Feb 2026
B.S. in Artificial Intelligence, Intensive Major in Business *Seoul, Republic of Korea*

- GPA: 4.22/4.3 (3.98/4.0) (Class Rank: 1)
- Relevant Coursework: Computer Vision, Machine Learning, Multicore and GPU Programming, Large Language Model, Reinforcement Learning

Georgia Institute of Technology Aug 2024 – Dec 2024
Exchange Student, Computer Science *Atlanta, GA, US*

- GPA: 4.0/4.0
- Coursework: Perception and Robotics, Knowledge Based AI, Computer Graphics, Computer Animation, Database Systems

Research Interest

Deep Generative Models, Representation Learning, Multimodal Learning
Exploring vision priors with a focus on diffusion-based priors that encode rich image information for versatile downstream applications.

Experience

CVLAB, KAIST Jan 2025 – Current
Undergraduate Research Assistant (Advisor: Seungryong Kim) *Seoul, Republic of Korea*

- Researched text-aware image restoration of degraded images using diffusion model's strong generative prior
- Conducted experiments on VLM-based text recognition and filtering capability
- Proposed a lightweight video restoration framework leveraging diffusion features to achieve robust optical flow estimation from degraded inputs for temporally consistent and high-quality video reconstruction.
- Exploring how to bridge the gap between generation and understanding using diffusion VLM models

Medical Imaging Systems Lab, Yonsei Sep 2023 – Feb 2025
Undergraduate Research Assistant (Advisor: Jongduk Baek) *Seoul, Republic of Korea*

- Studied medical physics and implemented CT projection and filtered back projection in Python
- Trained U-Net and RED-CNN on 3K Mayo Clinic CT Scans using PyTorch for denoising
- Explored ControlNet training on CT data and evaluated denoised LDCT image quality

USC Summer Program Jul 2025 – Aug 2025
Participant *Los Angeles, CA*

- Attended technical lectures on fundamental concepts in AI and data science to apply AI for problem solving
- Hands-on project on object detection and image classification using real world cases

GoodGang Labs Dec 2024 – Mar 2025
Machine Learning Research Engineer *Seoul, Republic of Korea*

- Performed advanced data augmentation (multi-turn, multi-lingual, fine-grained) on function call datasets (ToolAlpaca, ToolBench) using DeepSeek-R1 and Gemini
- Finetuned small language models on function call datasets with the Unsloth framework, improving function call alignment
- Evaluated and analyzed function call datasets with BFCL (Berkeley Function Call Leaderboard) scoring pipeline

Qualcomm Institute AI Development Program Jan 2024 – Feb 2024
Participant, Project Lead *San Diego, CA*

- Attended technical lectures, review sessions, and seminars on AI/ML algorithms at UCSD
- Conducted a project on predicting aircraft delay using 4 different ML models and achieved a highest accuracy of 93.5% in predicting delays
- Processed 1.5M flight and weather data entries from BTS and Visual Crossing Weather Data
- Published a paper on *Analysis of Aircraft Delay prediction based on Machine Learning Algorithms*

Publications

1. Jaewon Min, **Jaeeun Lee**, Paul Hyunbin Cho, Jin Hyeon Kim, Yeji Choi, Seungryong Kim. *Degradation-Invariant Flow Estimation with Diffusion Features for Efficient Video Restoration.* Under review at IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2026

2. Jaewon Min, Jin Hyeon Kim, Paul Hyunbin Cho, **Jaeeun Lee**, Jihye Park, Minkyu Park, Sangpil Kim, Hyunhee Park, Seungryong Kim. *Text-Aware Image Restoration with Diffusion Models.* Under review at International Conference on Learning Representations (ICLR) 2026 `[Project Page]`

3. Junseok Hong, **Jaeeun Lee**, Minji Kwon, Dongwon Kim, Seokheon Cho. *Analysis of Aircraft Delay Prediction based on Machine Learning Algorithms.* Korean Institute of Communications and Information Sciences (KICS) 2024

Projects

Text-Driven Real-Time Motion Generation & Biped Retargeting May 2025 – Jun 2025
Pytorch, Git *AI Developer*

- Implemented an autoregressive diffusion model to generate motion sequences from text prompts
- Applied a RL tracking controller in a closed loop to generate smooth motion sequences
- Performed motion retargeting from human to bipedal agents using a body-part-level attention mechanism

Diffusion-Based Generative Interior Design with Scene Understanding May 2024 – Jun 2024
Pytorch, Git *AI Developer*

- Processed a dataset of 300K images collected from Airbnb
- Developed a pipeline for room image transformation using segmentation and inpainting with Stable Diffusion to remove furniture
- Applied image segmentation for doors and windows, and performed depth estimation for 3D scene understanding
- Implemented image captioning for scene understanding and fine-tuned ControlNet for personalized room design

Virtual Try-On for Personalized Body Types Oct 2023 – Dec 2023
Pytorch, Git *AI Developer*

- Developed a virtual try-on service using the LaDI-VTON model to fit desired clothes to individual body types
- Preprocessed 120k+ images from AI-Hub by performing pose detection (OpenPose) and human segmentation (SimpleParse) to construct a dataset similar to VTON-HD
- Fine-tuned the LaDI-VTON model on the AI-Hub dataset to better represent Korean body types and skin tones

MarkIT: AI-Powered Bookmark Recommendation Web Service May 2023
Next.js, Zustand, Tailwind CSS, FastAPI, MySQL, Pinecone, Selenium, OpenAI, KoNLPy *Front-End & AI Developer*

- Developed a service that automatically recommends related bookmarks while users write content
- Integrated GPT to encode bookmark content into a vector database for personalized recommendations
- Extracted keywords from user content using TextRank to retrieve the most relevant bookmarks from the vector database

Scholarships

Dooeul Scholarship Foundation Award Spring 2023 – Fall 2025

- Awarded to 30 outstanding female students nationwide, honoring the legacy of Doo Eul Park (spouse of Samsung founder Lee Byung-chul) and supporting future female leaders.

Yoon Jayoung Future Innovator Scholarship Fall 2022 – Fall 2023

- Awarded to six female undergraduate students selected as future innovators at Yonsei University.

Korea–U.S. Advanced STEM Youth Exchange Scholarship Fall 2024

- Awarded to 200 outstanding Korean undergraduate students in STEM, providing a $9,000 scholarship for overseas exchange study.

AliExpress Talent Development Scholarship Spring 2025 - Fall 2025

- Awarded to 100 outstanding Korean undergraduate students in IT and AI, providing scholarship support and an official visit to Alibaba's headquarters in Hangzhou, China.

Extracurricular Activities

Yonsei Artificial Intelligence Academic Club Jul 2023 – Current
Member, Executive Member *Seoul, Republic of Korea*

- Completed *Standalone-DeepLearning* course, gaining a comprehensive understanding of fundamental deep learning concepts and core models
- Reviewed and discussed various computer vision research papers with other club members

Technical Skills

Programming Languages: Python, C/C++, Matlab, HTML, CSS, JavaScript, TypeScript, R, SQL
Frameworks: PyTorch, TensorFlow, Keras, ROS, React, Next.js, Node.js, Django, MongoDB, Bootstrap, Tailwind CSS
Developer Tools: Git, Firebase, Google Cloud Platform, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse
Operating Systems: Windows, Linux (Ubuntu)
Libraries: Pandas, NumPy, Matplotlib, OpenCV
Languages: Korean (Native), English (Proficient)