Seung Hyun Lee

CONTACT INFORMATION	Seung Hyun Lee Seoul, Korea	🏠**Homepage** ✉ **easter3163@korea.ac.kr**

RESEARCH BACKGROUND

Computer Vision / Deep Learning / Computer Graphics
Multimodal Representation Learning, Self-Supervised Learning
Generative Models, Sound-Guided Visual Synthesis

EDUCATION

M.S. in Artificial Intelligence, Korea University, GPA: 4.0/4.0   Mar 2022– Feb 2024
    Advisor: Prof. Sangpil Kim
        Thesis: Generative Models, Perception Algorithm
    Advisor: Prof. Jinkyu Kim
        Thesis: Representation Learning, Advisable AI
    Collaborated with Dr. {Feng Yang, Huiwen Chang, Innfarn Yoo} @ **Google Research**
    Collaborated with Dr. Wonmin Byeon @ **NVIDIA Research**

B.S. in Computer Science, University of Seoul, GPA: 3.6/4.0   Mar 2016– Feb 2022
    2 years of absence for obligatory military service - *Capital Defense Command Task Force*
    Undergraduate Research Assistant
      • Medical AI, Yonsei University Severance Hospital CCIDS

RESEARCH EXPERIENCE

Google Research, Moutain View, CA (Onsite)   Jun 2023– Dec 2024
Research Intern @ Machine Perception Lab
    Advisors: Dr. Feng Yang, Dr. Huiwen Chang, Dr. Innfarn Yoo
    Projects: Multi-modal generative models

Naver Papago, Pangyo, Korea   Dec 2020– Jun 2021
Research Intern @ Computer Vision Lab
    Projects: Optical character recognition tracking

Yonsei University, Seoul, Korea   Mar 2019– Nov 2020
Research Intern @ Severance Hospital CCIDS
    Projects: Pathologic complete response prediction after neoadjuvant chemoradiation

CONFERENCE PUBLICATIONS
(* Equal contribution)

Seung hyun Lee, Gyeongrok Oh, Wonmin Byeon, Chanyoung Kim, Won Jeong Ryoo, Sang Ho Yoon, Jihyun Bae, Jinkyu Kim*, Sangpil Kim*, "Sound-Guided Semantic Video Generation", In ***ECCV***, 2022.

Seung hyun Lee, Wonseok Roh, Wonmin Byeon, SangHo Yoon, Chanyoung Kim, Jinkyu Kim*, Sangpil Kim*, "Sound-Guided Semantic Image Manipulation", In ***CVPR***, 2022.

WORKSHOP PUBLICATIONS

Seung hyun Lee, Sang Ho Yoon, *Jinkyu Kim, *Sangpil Kim. "Sound-Guided Semantic Image Manipulation". In ***NIPSW*** –CtrlGen Workshop, 2021.

Seung hyun Lee, Nahyuk Lee, Chanyoung Kim, Wonjeong Ryoo, Jinkyu Kim, Sangho Yoon, Sangpil Kim. "Audio-Guided Image Manipulation for Artistic Paintings". In ***NIPSW*** –Machine Learning for Creativity and Design Workshop , 2021.

PREPRINTS

Seung hyun Lee, Sieun Kim, Innfarn Yoo, Feng Yang, Donghyeon Cho, Youngseo Kim, Huiwen Chang, Jinkyu Kim*, Sangpil Kim*, "Soundini: Sound-Guided Diffusion for Natural Video Editing", ***Under review***.

Seung hyun Lee, Chanyoung Kim, Wonmin Byeon, SangHo Yoon, Jinkyu Kim*, Sangpil Kim*, "LISA: Localized Image Stylization with Audio via Implicit Neural Representation", ***Under review***.

Seung hyun Lee, Chanyoung Kim, Wonmin Byeon, Gyeongrok Oh, Jooyoung Lee, SangHo Yoon, Jinkyu Kim*, Sangpil Kim*, "Robust Sound-Guided Image Manipulation", ***Under review***.

Wonseok Roh*, **Seung hyun Lee***, Won Jeong Ryoo, Gyeongrok Oh, Jakyung Lee, Soo Yeon Hwang, Hyung-gun Chi, Sangpil Kim, "Functional Hand Type Prior for 3D Hand Pose Estimation and Action Recognition from Egocentric View Monocular Videos ", ***Under review***.

SKILLS	**Programming Languages**: Python, C/C++, Java.
	Tools: PyTorch, TensorFlow, JAX

TEACHING
EXPERIENCE

Korea University, Seoul Korea
- TA of Machine Learning (Spring 2023)

OTHER
SERVICES

Pytorch Open Source Contribution, Pytorch Tutorial Translation (lead menti)	2021
President of Algorithm Club at University of Seoul	2016–2021
Google Developer Student Clubs – University of Seoul, Korea	2021
Software Maestro 11th – Best Software talent discovery program, Korea	2020
SeoulMate – Buddy program for the international students, Korea	2016

PATENTS

Seunghyun Lee. "Image Quality Improvement Appratus Using Artificial Neural Network". *Korea* 1020200021991, filled 20.02 issued 21.09.

REFERENCES

Korea University
- Prof. Sangpil Kim (Advisor)   *Assistant Professor*
- Prof. Jinkyu Kim (Thesis Advisory Committee)   *Assistant Professor*

Google Research
- Dr. Feng Yang (Internship Mentor)   *Senior Staff Software Engineer/Tech Lead Manager*
- Dr. Huiwen Chang (Research Mentor)   *Research Scientist*
- Dr. Innfarn Yoo (Research Mentor)   *Research Scientist*

NVIDIA Research
- Dr. Wonmin Byeon (Research Mentor)   *Research Scientist*