

# YEON-JI SONG

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## EDUCATION

### Seoul National University (SNU)

*Ph.D in Interdisciplinary Program in Neuroscience*

- Advisor: Byoung-Tak Zhang
- Video Understanding, Generative AI, Unsupervised Representation Learning

2021.09 – Present

*Seoul, South Korea*

### Hong Kong University of Science and Technology (HKUST)

*B.Eng. in Electronic and Computer Engineering*

2017.09 – 2021.05

*Clear Water Bay, Hong Kong*

## PUBLICATIONS

### Sparse-Controlled Gaussian Splatting from Blurry Images

In progress, to be submitted

### Unsupervised Dynamic Video Prediction with Object-Centric Kinematics

Yeon-Ji Song, Suhjung Choi, Jaein Kim, Jin-Hwa Kim\*, Byoung-Tak Zhang\*

*Under review*

### Continuous SO(3) Equivariant Convolution for 3D Point Cloud Analysis

Jaein Kim, Heebin Yoo, Dong-Sig Han, Yeon-Ji Song, Byoung-Tak Zhang\*

*The 18th European Conference on Computer Vision (ECCV) 2024*

### Learning Object Appearance and Motion Dynamics with Object-Centric Representations

Yeon-Ji Song, Hyunseo Kim, Suhjung Choi, Jin-Hwa Kim\*, Byoung-Tak Zhang\*

*NeurIPS 2023 workshop on Causal Representation Learning*

### On Discovery of Local Independence over Continuous Variables via Neural Contextual Decomposition

Inwoo Hwang, Yunhyeok Kwak, Yeon-Ji Song, Byoung-Tak Zhang\*, Sanghack Lee\*

*In Proceedings of CLeaR 2023*

## WORK EXPERIENCE

### PitchDaily

*Part-time Artificial Intelligence Intern*

- Created text summarization module using KoAlpaca.

2023.03 – 2023.11

*Seoul, South Korea*

### Biointelligence Lab

*Undergraduate Research Intern*

- Designed and conducted research on Robotics and Reinforcement Learning.

2020.12 – 2021.04

*SNU*

### Surromind (SNU)

*Artificial Intelligence Research Engineer*

- Designed and implemented a Deep Learning model for Pose Estimation based on Detectron2.

2020.07 – 2020.10

*Seoul, South Korea*

### Robocore AI

*Robotics Software Engineer*

- Created new solutions for temi robots, combining IOT products and the mobility of temi.
- Performed GUI design, system design and solved real-life customer request with AI solution.

2020.06 – 2020.07

*Science Park, HongKong*

### Codecrain Inc.

*Full-stack Web Developer*

- Developed frontend web application along with a senior developer using React.js.
- Implemented React.js and Node.js to enhance functionality and user experience.

2019.06 – 2019.09

*Seoul, South Korea*

## PROJECTS

<b>Robot Navigation based on Reinforcement Learning</b> <i>Final Year Project</i> <ul style="list-style-type: none"><li>• Advisor: Ming Liu (Robotics and Multi-Perception Lab, Robotics Institute)</li><li>• Title: Map-based Robot Navigation and Path planning with Deep Reinforcement Learning</li><li>• Proposed ML and RL based algorithm for autonomous navigation in a cluttered environment.</li></ul>	2020.05 – 2021.05 <i>HKUST</i>
<b>Bundleport</b> <i>CTO &amp; Logistics Manager</i> <ul style="list-style-type: none"><li>• Created a full-stack web application using Node.js, MySQL, HTML5/CSS3, and JavaScript.</li><li>• Developed on cloud server using AWS S3, EC2, Elastic Beanstalk and Cloudfront.</li></ul>	2018.05 – 2020.05 <i>HKUST</i>
<b>HKUST Robotics Team</b> <i>Robotics Software Engineer</i> <ul style="list-style-type: none"><li>• Designed and implemented algorithms for processing data from Camera and LiDAR sensors.</li></ul>	2018.09 – 2018.12 <i>HKUST</i>
<b>HKUST ROV Community Project</b> <i>Activity Assistant</i> <ul style="list-style-type: none"><li>• HKUST course code: ENGG2900D</li></ul>	2019.02 – 2019.05 <i>HKUST</i>

## TEACHING EXPERIENCE

Multimodal Deep Learning Theories and Applications	2024.09 – 2024.12
POSCO DX 2024 AI Youth Challenge	2024.06 – 2024.08
POSCO DX 2023 AI Youth Challenge	2023.06 – 2023.08
Artificial Intelligence	2022.03 – 2022.06
New Computer Technology (SNU x HKUST)	2022.03 – 2022.06

## AWARDS AND CERTIFICATES

Best Presentation Paper Award @KCC2024	2024
RoboCup@Home DSPL 2nd Place	2022
HKUST Admission Scholarship	2017