Yeon-Ji Song

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Education

Seoul National University (SNU) 2021.09 – present
Ph.D in Interdisciplinary Program in Neuroscience *Seoul, South Korea*
- Advisor: Byoung-Tak Zhang

Hong Kong University of Science and Technology (HKUST) 2017.09 – 2021.05
B.Eng. in Electronic and Computer Engineering *Clear Water Bay, Hong Kong*

Research Interests

3D Computer Vision
Generative Model
Object-Centric Representation
Deep Reinforcement Learning

Selected Publications

Motion-Aware Dynamic View Synthesis from Blurry Monocular Video via Sparse-Controlled Gaussian Splatting
Under review

Unsupervised Dynamic Video Prediction with Object-Centric Kinematics
Yeon-Ji Song, Suhyung 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, Suhyung 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

Professional Services

Peer-reviewed International Conferences
- Winter Conference on Applications of Computer Vision (WACV) 2024

Technical Mentoring
- POSCO DX - AI Youth Challenge 2024
- POSCO DX - AI Youth Challenge 2023

Awards and Certificates

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

Teaching Experience

Multimodal Deep Learning Theories and Applications 2024.09 – 2024.12
Project XR: AI Chatbot 2024.01 – 2024.05
Artificial Intelligence 2022.03 – 2022.06
New Computer Technology (SNU x HKUST) 2022.03 – 2022.06

PROJECTS

SNU-NAVER Hyperscale AI Center 2023.06 – 2024.05
Student Researcher *SNU*
- Advisor: Jin-Hwa Kim
- Developed video generative models focused on 3D object and motion dynamics.
- Published at NeurIPS 2023 workshop on Causal Representation Learning.

Robot Navigation based on Reinforcement Learning 2020.05 – 2021.05
Final Year Project *HKUST*
- Advisor: Ming Liu (Robotics and Multi-Perception Lab, Robotics Institute)
- Title: Map-based Robot Navigation and Path planning with Deep Reinforcement Learning
- Proposed ML and RL based algorithm for autonomous navigation in a cluttered environment.

Bundleport 2018.05 – 2020.05
CTO & Logistics Manager *HKUST*
- Created a full-stack web application using Node.js, MySQL, HTML5/CSS3, and JavaScript.
- Developed on cloud server using AWS S3, EC2, Elastic Beanstalk and Cloudfront.

HKUST Robotics Team 2018.09 – 2018.12
Robotics Software Engineer *HKUST*
- Designed and implemented algorithms for processing data from Camera and LiDAR sensors.

HKUST ROV Community Project 2019.02 – 2019.05
Activity Assistant *HKUST*
- HKUST course code: ENGG2900D

WORK EXPERIENCE

PitchDaily 2023.03 – 2023.11
Part-time Artificial Intelligence Intern *Seoul, South Korea*
- Created text summarization module using KoAlpaca.

Biointelligence Lab 2020.12 – 2021.04
Undergraduate Research Intern *SNU*
- Designed and conducted research on Robotics and Reinforcement Learning.

Surromind (SNU) 2020.07 – 2020.10
Artificial Intelligence Research Engineer *Seoul, South Korea*
- Designed and implemented a Deep Learning model for Pose Estimation based on Detectron2.

Robocore AI 2020.06 – 2020.07
Robotics Software Engineer *Science Park, HongKong*
- 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.

Codecrain Inc. 2019.06 – 2019.09
Full-stack Web Developer *Seoul, South Korea*
- Developed frontend web application along with a senior developer using React.js.
- Implemented React.js and Node.js to enhance functionality and user experience.