Sunwoong Na

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Research Interests

Robotics, Long Horizon Task, Task Learning, Reinforcement Learning, Robot Vision

Education

Chung-Ang University Seoul, South Korea

B.S. in Mechanical Engineering & Integrative Engineering - dual major *(Cum Laude)* *Mar 2014 - Feb 2020*

- GPA: 3.98/4.5 *(overall)*, 4.25/4.5 *(major)*
- Period includes two years of military service.

Publications

[1] Hyojeong Kim*, **Sunwoong Na***, Soyeon Park, Jiho Lee, Eunwoo Kim, Yoonseon Oh, "Hierarchical Planning Framework for Long-Horizon Cooking Tasks", submitted to RA-Letters with IROS option.

(* indicates equal contribution)

Research Experiences

Robots with Humans Lab, HYU Seoul, South Korea

Researcher (Advisor: Professor Yoonseon Oh) *Dec 2021 - Present*

- Research project: Learning transferable task knowledge for social robots.
  - Researched in long horizon cooking task learning.

Korea Institute of Science and Technology Seoul, South Korea

Research Intern (Advisor: Senior Researcher Yoonseon Oh) *Mar 2021 – Nov 2021*

- Research project: Learning transferable task knowledge for social robots.
  - Built kitchen environment for a cooking robot with Unity.
  - Researched in task and motion planning framework in cooking tasks.
- Research project: Robot task planning for single and multiple robots connected to cloud system.
  - Developed navigation control system for four mobile robots.
  - Developed semantic map system for smart factory.

System Health & Risk Management Lab, SNU Seoul, South Korea

Undergraduate Intern (Advisor: Professor Byeungdong Youn) *Jul 2019 – Dec 2019*

- Researched in anomaly detection method to detect failures of journal bearing.

Professional Experiences

OnePredict Seoul, South Korea

Data Scientist *Jan 2020 - Dec 2020*

- Failure detection algorithm PoC (Proof of Concept)
  - Analyzed failure data of turbomachines (pump, turbine, etc).
  - Verified failure detection algorithm with given data.
- Development of failure detection algorithm for turbomachines
  - Developed CNN algorithm to detect failure using vibrational signal.
  - Developed rule-based detection algorithm.
  - Executed software system testing.

Extracurricular Activities

Undergraduate Social Venture Start-up Team
Team Leader *Jan 2018 - Dec 2018*

- Project: App service for sharing local safety information with neighbors
  - Consulted by government program (K-ICT Start-up Program).
  - Selected as undergraduate Start-up team at CAU.

Hornors & Awards

Encouragement Prize, Korea East-West Power Company AI Competition, 2020

Encouragement Prize, Social Venture Competition Asia, 2018

Academic Excellence Scholarship, Fall 2014, Spring 2015, Spring/Fall 2018, Spring 2019

Skills

Programming Languages: Python, Matlab, C++, C#

Operating Systems: Ubuntu, macOS, Windows

Frameworks: ROS, PyTorch, MoveIt, Ray

Tools: Unity, Docker, Latex, WandB, Git

Languages: Korean (Native), English (Fluent, GRE 158/169/3.5)