SEUNGCHAN KIM

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EDUCATION

Carnegie Mellon University — *Pittsburgh, PA*
Ph.D. Student at Robotics Institute — Sep 2020 - Present
Advisor: Sebastian Scherer

Brown University — *Providence, RI*
M.S. in Computer Science — Sep 2019 - May 2020
B.S. in Applied Mathematics & Computer Science — Sep 2013 - May 2019
Advisor: George Konidaris

RESEARCH EXPERIENCE

CMU AirLab — *Pittsburgh, PA*
Graduate Research Assistant — Sep 2020 - Present

- Conducting research in artificial intelligence and robotics, toward a Ph.D.
- Focus on semantic exploration, multi-robot systems, and multi-modal foundation models.

Brown University Intelligent Robot Lab — *Providence, RI*
Undergraduate Research Assistant — Sep 2017 - May 2020

- Researched on deep reinforcement learning and model-based reinforcement learning.

PUBLICATIONS

1. **Multi-Robot Multi-Room Exploration with Geometric Cue Extraction and Circular Decomposition**
Seungchan Kim, Micah Corah, John Keller, Graeme Best, Sebastian Scherer.
Accepted at IEEE Robotics and Automation Letters (RA-L) 2023.

2. **AirDet: Few-Shot Detection without Fine-tuning for Autonomous Exploration**
Bowen Li, Chen Wang, Pranay Reddy, **Seungchan Kim**, Sebastian Scherer.
European Conference on Computer Vision (ECCV) 2022.

3. **Robotic Interestingness via Human-Informed Few-Shot Object Detection**
Seungchan Kim, Chen Wang, Bowen Li, Sebastian Scherer.
IEEE/RSJ International Conference on Robotics and Systems (IROS) 2022.

4. **Unsupervised Online Learning for Robotic Interestingness with Visual Memory**
Chen Wang, Yuheng Qiu, Wenshan Wang, Yafei Hu, **Seungchan Kim**, Sebastian Scherer.
IEEE Transactions on Robotics (T-RO) 2021.

5. **Using Computational Analysis of Behavior to Discover Developmental Change in Memory-Guided Attention Mechanisms in Childhood**
Dima Amso, Lakshmi Govindarajan, Pankaj Gupta, Heidi Baumgartner, Andrew Lynn, Kelley Gunther, Diego Placido, Tarun Sharma, Vijay Veerabadran, Kalpit Thakkar, **Seungchan Kim**, Thomas Serre.
PsyArXiv. doi:10.31234/osf.io/gq4rt.

6. **Combating the Compounding-Error Problem with a Multi-step Model**
Kavosh Asadi, Dipendra Misra, **Seungchan Kim**, Michael Littman.
arXiv preprint arXiv:1905.13320 (2019).

7. **DeepMellow: Removing the Need for a Target Network in Deep Q-Learning**
Seungchan Kim, Kavosh Asadi, Michael Littman, George Konidaris.
International Joint Conference on Artificial Intelligence (IJCAI) 2019.

8. **Removing the Target Network from Deep Q-Networks with the Mellowmax Operator**
Seungchan Kim, Kavosh Asadi, Michael Littman, George Konidaris.
International Conference on Autonomous Agents and Multiagent Systems (AAMAS) 2019.

TEACHING

- Teaching Assistant, CMU 16-711 Kinematics, Dynamics, Control — Jan 2023 - May 2023
- Teaching Assistant, CMU 16-833 Robot Localization and Mapping — Jan 2022 - May 2022
- Teaching Assistant, Brown CSCI1430 Computer Vision — Jan 2019 - May 2019
- Teaching Assistant, Brown CSCI0040 Scientific Computing and Problem Solving — Jan 2015 - May 2015

ACADEMIC ACTIVITIES

Organizer

- Tartan Planning Series — Mar 2023 - May 2023

Reviewer

- **Robotics:** IJRR, IEEE RA-L, ICRA 2023, MRS 2023
- **Machine Learning:** ICLR 2021/2023, NeurIPS 2021/2022, AAAI 2021, ICML 2020

INVITED TALKS

An Alternative Softmax Operator for Deep Reinforcement Learning — Sep 2019
Machine Intelligence Community (MIC) Conference — *Boston, MA*