SEUNGCHAN KIM

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https://seungchan-kim.github.io

Education

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

Brown University — **Providence, Rhode Island**
M.S. in Computer Science — Sep 2019 - May 2020
B.S. in Applied Mathematics & Computer Science — Sep 2013 - May 2019
Advisors: George Konidaris & Michael Littman

Research Experience

CMU Air Lab — Oct 2020 - Present
- Conducting research on active perception and robotic exploration.

Brown University Intelligent Robot Lab — Sep 2017 - May 2020
- Developed a new deep RL algorithm using an alternative softmax operator.
- Proposed multi-step model-based RL algorithm to address compounding-error problem.

Brown University Serre Lab — Jan 2018 - May 2019
- Analyzed the memory-guided visual attention of children using computer vision algorithms.

Preprints

[5] **Discovering Developmental Mechanisms of Memory-Guided Attention using Computer Vision**
Dima Amso, Lakshmi Narashimhan Govindarajan, Pankaj Gupta, Heidi Baumgartner, Andrew Lynn, Kelley Gunther, Diego Placido, Tarun Sharma, Vijay Veerabadran, Kalpit Thakkar, **Seungchan Kim**, Thomas Serre. *Under Review.*

[4] **Combating the Compounding-Error Problem with a Multi-step Model**
Kavosh Asadi, Dipendra Misra, **Seungchan Kim**, Michael Littman.
arXiv preprint. CoRR abs/1905.13320 [cs.LG]

Publications

[3] **Adaptive Temperature Tuning for Mellowmax in Deep Reinforcement Learning**
Seungchan Kim, George Konidaris.
Neural Information Processing Systems (NeurIPS) 2019 Deep RL Workshop.

[2] **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.
Multidisciplinary Conference on Reinforcement Learning and Decision Making (RLDM) 2019.

[1] **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.

Invited Talks

DeepMellow: Removing the Need for a Target Network in Deep Q-Learning
Brown University Robotics Lab, Providence, RI. — Oct 2019

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

Teaching Assistantships

CS1430 Computer Vision, Brown CS — Jan 2019 - May 2019
CS0040 Intro to Scientific Computing and Problem Solving, Brown CS — Jan 2015 - May 2015
EN0040 Dynamics and Vibrations, Brown Engineering — Jan 2015 - May 2015

Academic Activities

Reviewer

- ICML 2020, AAAI 2021, ICLR 2021
- NeurIPS 2019 Workshops: ML & Physical Science, ML for Health
- NeurIPS 2020 Workshop: Challenges of Real-World RL

Mentor

- CMU AI Mentorship Program 2020-2021
- CMU SCS Graduate Application Support Program 2020

Graduate Coursework

16-811	Math Fundamentals for Robotics
10-715	Advanced Introduction to Machine Learning
16-711	Kinematics, Dynamics, and Control
16-833	Robot Localization and Mapping