SEUNGCHAN KIM

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Education

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

Brown University — **Providence, Rhode Island**
M.S. in Computer Science (GPA: 4.0/4.0) — *Sep 2019 - May 2020*
B.S. in Applied Mathematics & Computer Science (GPA: 3.93/4.0) — *Sep 2013 - May 2019*
Advisors: George Konidaris & Michael Littman

Research Experience

Brown University Robotics Lab — Sep 2017 - May 2020

- Devised a new deep reinforcement learning algorithm using an alternative softmax operator.
- Proposed multi-step model-based RL algorithm to address compounding-error problem.
- Theoretically and empirically validated the efficiency of object-oriented partially observable Monte-Carlo planning algorithm.

Brown University Serre Lab — Jan 2018 - May 2019

- Modeled the memory-guided visual attention of children using Faster R-CNN.

ROK Army Signal Intelligence Research Lab — Sep 2015 - Jun 2017

- Decrypted navigational military signals, and managed signal database.

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]

Peer-Reviewed 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.
Also at *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 Talk

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

Teaching

Brown University
Teaching Assistant
CSCI1430 Computer Vision — Jan 2019 - May 2019
CSCI0040 Intro to Scientific Computing and Problem Solving — Jan 2015 - May 2015

Academic Activities

Reviewer

- ICML 2020, NeurIPS 2019 Workshop on ML & Physical Science, ML for Health