# 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 onwards*

**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