

## Dong Ki Kim

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<b>Education</b>	<b>Massachusetts Institute of Technology</b> , Cambridge, MA S.M. in Aeronautics and Astronautics Focus: Reinforcement Learning Cumulative GPA: 5.0/5.0 <b>Cornell University</b> , Ithaca, NY B.S. in Electrical and Computer Engineering Highest Honors: <i>Summa Cum Laude</i>	<b>September 2017 – Present</b>  <b>Graduated January 2016</b>
<b>Research Experience</b>	<b>Laboratory for Information and Decision Systems</b> <b>Massachusetts Institute of Technology</b> Advisor: Professor. Jonathan P. How <ul style="list-style-type: none"><li>As part of MIT-IBM Watson AI Lab, developed Learning to Coordinate and Teach Reinforcement (LeCTR), framework for agents to learn to teach in cooperative multiagent reinforcement learning settings.</li><li>Built attention-based hierarchical reinforcement learning framework that identifies useful latent features across multiple sensory inputs and accelerates in transfer learning.</li></ul> <b>The Air Lab, The Robotics Institute</b> <b>Carnegie Mellon University</b> Advisor: Professor. Sebastian Scherer <ul style="list-style-type: none"><li>Developed deep multimodal network that improves segmentation robustness to appearance variations, e.g., Summer vs Winter, by combining image and LiDAR sensor data.</li><li>Built ROS-based system that estimates terrain roughness from LiDAR sensor data in real-time.</li></ul> <b>The Robot Intelligence through Perception Lab</b> <b>Toyota Technological Institute at Chicago</b> Advisor: Professor. Matthew R. Walter <ul style="list-style-type: none"><li>Developed cross-view visual localization system that estimates vehicle's pose on georeferenced satellite map given sequence of ground-level images.</li><li>Improved LSD-SLAM's pose estimation by incorporating ORB-SLAM's pose-graph keyframe constraints.</li></ul> <b>Advanced Multimedia Processing Lab</b> <b>Cornell University</b> Advisor: Professor. Tsuhan Chen <ul style="list-style-type: none"><li>Built vision-based system that enables drone to navigate indoors autonomously and find specific target.</li><li>Developed indoor localization algorithm based on floor plan and camera.</li></ul>	<b>September 2017 – Present</b>     <b>August 2016 – July 2017</b>  <b>January 2016 – July 2016</b>  <b>May 2014 – January 2016</b>
<b>Publication</b>	<b>Conference Paper</b> <ul style="list-style-type: none"><li>Shayegan Omidshafiei, <b>Dong-Ki Kim</b>, Miao Liu, Gerald Tesauro, Matthew Riemer, Christopher Amato, Murray Campbell, and Jonathan P. How. Learning to Teach in Cooperative Multiagent Reinforcement Learning. <i>Association for the Advancement of Artificial Intelligence (AAAI)</i>. 2019.</li><li>Shayegan Omidshafiei, <b>Dong-Ki Kim</b>, Jason Pazis, and Jonathan P. How. Crossmodal Attentive Skill Learner. <i>International Conference on Autonomous Agents and Multiagent Systems (AAMAS)</i>. 2018.</li><li><b>Dong-Ki Kim</b>, Daniel Maturana, Masashi Uenoyama, and Sebastian Scherer. Season-Invariant Semantic Segmentation with A Deep Multimodal Network. <i>Field and Service Robotics (FSR)</i>. 2017.</li><li><b>Dong-Ki Kim</b> and Matthew R. Walter. Satellite Image-based Localization via Learned Embeddings. <i>International Conference on Robotics and Automation (ICRA)</i>. 2017.</li><li>Hang Chu, <b>Dong-Ki Kim</b>, and Tsuhan Chen. You Are Here: Mimicking the Human Thinking Process in Reading Floor-Plans. <i>International Conference on Computer Vision (ICCV)</i>. 2015.</li></ul> <b>Journal Paper</b> <ul style="list-style-type: none"><li><b>Dong-Ki Kim</b>, Shayegan Omidshafiei, Jason Pazis, and Jonathan P. How. Crossmodal Attentive Skill Learner. <i>Journal of Autonomous Agents and Multiagent Systems (JAAMAS)</i>. (submitted; invited submission)</li></ul> <b>Workshop and Symposium Paper</b> <ul style="list-style-type: none"><li><b>Dong-Ki Kim</b>, Miao Liu, Shayegan Omidshafiei, Sebastian Lopez-Cot, Matthew Riemer, Gerald Tesauro, Murray Campbell, Golnaz Habibi, and Jonathan P. How. Heterogeneous Knowledge Transfer via Hierarchical Teaching in Cooperative Multiagent Reinforcement Learning. <i>Association for the Advancement of Artificial Intelligence (AAAI) Workshop</i>. 2019.</li><li>Shayegan Omidshafiei, <b>Dong-Ki Kim</b>, Miao Liu, Gerald Tesauro, Matthew Riemer, Christopher Amato, Murray Campbell, and Jonathan P. How. Learning to Teach in Cooperative Multiagent Reinforcement Learning. <i>International Conference on Machine Learning (ICML) Workshop</i>. 2018.</li><li>Shayegan Omidshafiei, <b>Dong-Ki Kim</b>, Jason Pazis, and Jonathan P. How. Crossmodal Attentive Skill Learner. <i>Neural Information Processing Systems (NIPS) Symposium</i>. 2017.</li></ul>	

- Daniel Maturana, Sankalp Arora, Po-Wei Chou, **Dong-Ki Kim**, Masashi Uenoyama, and Sebastian Scherer. Online Semantic Mapping for Autonomous Navigation and Scouting. *Robotics: Science and Systems (RSS) Workshop*. 2017.

#### Technical Report

- **Dong-Ki Kim** and Tsuhan Chen. Deep Neural Network for Real-Time Autonomous Indoor Navigation. *arXiv preprint arXiv:1511.04668*. 2015.

#### Skill

**Programming Language:** Python, C/C++, Matlab, HTML, CSS, JavaScript

**Tools/Library/Software:** PyTorch, TensorFlow, Theano, Keras, Caffe, OpenCV, ROS, Point Cloud Library

#### Fellowship and Award

##### Kwanjeong Education Foundation Scholarship

**September 2017 – Present**

- Receiving \$30,000/year for 4-5 years for graduate studies

##### Merrill Presidential Scholar

**February 2015**

- Nominated for Cornell University's prestigious award given to top 1% graduating seniors