

Jaedong Hwang

CONTACT INFORMATION

e-mail: jdhwang@mit.edu
homepage: <https://jd730.github.io>

twitter: [jaedong_hwang](#)
github: [jd730](#)

RESEARCH INTERESTS

Computational Neuroscience, Cognitive Science, Computer Vision, Reinforcement Learning.

EDUCATION

Massachusetts Institute of Technology, MA Sep 2021 - Present
PhD Student
Major: Electrical Engineering & Computer Science
Advisor: Ila Fiete, Paul Liang

Seoul National University, Korea Sep 2019 - Aug 2021
Master of Science (Distinguished Dissertation Award)
Major: Electrical & Computer Engineering
Advisor: Bohyung Han

Seoul National University, Korea Mar 2013 - Aug 2019
Bachelor of Science (Summa cum laude) (Military Service: 2015 - 2017)
Major: Computer Science & Engineering (minor: Brain-Mind-Behavior)

PUBLICATIONS

Jaedong Hwang^{*}, Kumar Tanmay^{*}, Seok-Jin Lee^{*}, Ayush Agrawal, Hamid Palangi, Kumar Ayush, Ila Fiete[†], Paul Pu Liang[†]. **Learn Globally, Speak Locally: Bridging the Gaps in Multilingual Reasoning**. arXiv. 2025.

Yi Xie, Jaedong Hwang, Carlos D. Brody, David W. Tank, Ila Fiete. **A Multi-Region Brain Model to Elucidate the Role of Hippocampus in Spatially Embedded Decision-Making**. ICML. 2025.

Akhilan Boopathy, Sunshine Jiang, William Yue, Jaedong Hwang, Abhiram Iyer, Ila Fiete. **Breaking Neural Network Scaling Laws with Modularity**. ICLR. 2025.

Jaedong Hwang, Brian Cheung, Zhang-Wei Hong, Akhilan Boopathy, Pulkit Agrawal, Ila Fiete. **ImageNet-RIB Benchmark: Large Pre-Training Datasets Don't Guarantee Robustness after Fine-Tuning**. NeurIPSW (Fine-Tuning in Modern Machine Learning: Principles and Scalability). 2024.

Jaedong Hwang, Zhang-Wei Hong, Eric R Chen, Akhilan Boopathy, Pulkit Agrawal, Ila Fiete. **Grid Cell-Inspired Fragmentation and Recall for Efficient Map Building**. TMLR. 2024. (*Featured Certification; 4% among accepted papers*)

Akhilan Boopathy, William Yue, Jaedong Hwang, Abhiram Iyer, Ila Fiete. **Towards Exact Computation of Inductive Bias**. IJCAI. 2024. (*long; 16% among accepted papers*)

Raymond L Wang, Jaedong Hwang, Akhilan Boopathy, Ila Fiete. **Rapid Learning Without Catastrophic Forgetting in the Morris Water Maze**. ICML. 2024.

Jaedong Hwang, Zhang-Wei Hong, Eric R Chen, Akhilan Boopathy, Pulkit Agrawal, Ila Fiete. **Neuro-Inspired Fragmentation and Recall to Overcome Catastrophic Forgetting in Curiosity**. NeurIPSW (Intrinsically Motivated Open-ended Learning). 2023.

Jaedong Hwang*, Sujaya Neupane*, Mehrdad Jazayeri[†], Ila Fiete[†]. **Generalizable Relational Inference with Cognitive Maps in a Hippocampal Model and in Primates.** NeurIPS (Associative Memory & Hopfield Networks). 2023.

Akhilan Boopathy, Kevin Liu, Jaedong Hwang, Shu Ge, Asaad Mohammedsaleh, Ila Fiete. **Model-agnostic Measure of Generalization Difficulty.** ICML. 2023.

Jonghyeon Seon, Jaedong Hwang, Jonghwan Mun, Bohyung Han. **Stop or Forward: Dynamic Layer Skipping for Efficient Action Recognition.** WACV. 2023.

Jaedong Hwang, Seoung Wug Oh, Joon-Young Lee, Bohyung Han. **Exemplar-Based Open-Set Panoptic Segmentation Network.** CVPR. 2021.

Jaedong Hwang*, Seohyun Kim*, Jeany Son, Bohyung Han. **Weakly Supervised Instance Segmentation by Deep Community Learning.** WACV. 2021.

Jaedong Hwang*, Sanghyeok Park*, Seokjin Lee*, Yeong-Gil Shin. **Robust harmonic field based tooth segmentation in real-life noisy scanned mesh.** SPIE Medical Imaging. 2019.

Te-Lin Wu, Jaedong Hwang, Jingyun Yang, Shaofan Lai, Carl Vondrick, Joseph Lim. **Learning from Noisy Demonstration Sets via Meta-Learned Suitability Assessor.** Open-Review. 2018.

Seungwon Lee*, Jaedong Hwang*, Eunsol Kim, Byoung-Tak Zhang. **An adaptive computational discourse system based on data-driven learning algorithm.** International Symposium on Advanced Intelligent Systems (ISIS). 2015. (*Best Session Paper Award*)

(* denotes equal contributions, [†] denotes equal correspondence)

CONFERENCE Yi Xie, Jaedong Hwang, Carlos Broady, David Tank, Ila Fiete. **A Multi-Region Brain Model to Shed Light on the Role of Hippocampus in Spatially Embedded Decision Tasks.** CCN. 2024.

Sujaya Neupane*, Jaedong Hwang*, Ila Fiete[†], Mehrdad Jazayeri[†]. **Generalizable relational inference with cognitive maps in a hippocampal model and primates.** SfN Nanosymposium - Spatial Representations Across Species. 2023. (*oral*)

Jaedong Hwang*, Sujaya Neupane*, Mehrdad Jazayeri[†], Ila Fiete[†]. **A Grid Cell-Place Cell Scaffold Allows Rapid Learning and Generalization at Multiple Levels on Mental Navigation Tasks.** CCN. 2023.

Raymond L Wang, Jaedong Hwang, Akhilan Boopathy, Ila Fiete. **Rapid Learning Without Catastrophic Forgetting in Multiple Morris Water Mazes.** CCN. 2023.

AWARDS & HONORS	Doctoral Study Fellowship by Korea Foundation for Advanced Studies	2021 - 2026
	(Full Funding)	
	Government Scholarship for Overseas Study by South Korean Gov.	2021 - 2023
	(\$40,000 / year)	(declined)
	Travel Award (NeuroAI Workshop @ NeurIPS 2024)	2024
	Highlighted Reviewer (ICLR 2022)	2022
	Outstanding Reviewer (ICCV 2021)	2021
	Distinguished Dissertation Award in ECE, Seoul National University	2021

Outstanding Reviewer (CVPR 2021)	2021
Full scholarship by Seoam Yoon Se Young Foundation	2013 - 2019
Best Paper of department of Brain-Mind-Behavior, Seoul National University	2017
Seoul Metropolitan Police Agency Award Certificate	2016
ISIS 2015 Best Session Paper Award	2015
Jongha Fellowship	2014

PROFESSIONAL EXPERIENCE	Adobe Research , Adobe, CA	Jun 2020 - Mar 2021
	<i>Deep Learning Research Intern</i> , Mentor: Joon-Young Lee, Seoung Wug Oh	
	Computer Vision Lab , Seoul National University, Korea	Sep 2018 - Aug 2019
	<i>Research Intern</i> , Advisor: Bohyung Han	
	T-Brain , SKT, Korea	May 2018 - Aug 2018
	<i>Research Intern</i>	
	CLVR , University of Southern California, CA	Mar 2018 - May 2018
	<i>Visiting Student</i> , Advisor: Joseph Lim	
	Cybercrime Investigation Unit , Seoul Metropolitan Police Agency, Korea	2015 - 2017
	<i>Investigator</i> as secondment of military service	
	BioIntelligence Lab , Seoul National University, Korea	Jul 2014 - Apr 2015
	<i>Research Intern</i> , Advisor: Byeong-Tak Zhang	

ACADEMIC SERVICES	Conference Reviewer: NeurIPS, ICLR, ICML, CVPR, ECCV, ICCV, WACV, CCN
	Journal Reviewer: TPAMI, TMLR
	Volunteer: ICLR 2020

TEACHING EXPERIENCE	Computational Sensorimotor Learning , MIT	Spring 2024
	<i>Teaching Assistant</i> Instructor: Pulkit Agrawal	
	The Graduate Application Assistance Program , MIT EECS	2021 - 2023
	<i>Mentor</i>	
	Mentored applicants (especially from underrepresented groups) about the graduate application process.	
	Digital Computer Concept and Practice , Seoul National University	Spring 2020
	<i>Teaching Assistant</i> Instructor: Bohyung Han	
	Instructed laboratory classes regarding Python and basic programming.	

INVITED PRESENTATIONS	Voxel 51 Boston Meetup, Boston, MA	Feb 2025
	Artificial Intelligence Institute at Seoul National University, Korea	Jun 2023
	Samsung Electronics, Korea	Aug 2021