

Jaedong Hwang

CONTACT INFORMATION

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

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

RESEARCH INTERESTS

Data-Centric Machine Learning (learning from limited data, weakly-supervised or open-set learning, catastrophic forgetting)
Computational Neuroscience (grid cell, hippocampus, visual cortex, memory)
Cognitive Science (intuitive physics)

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](#), Kathleen Zhang, Wei Dai, Konstantinos Kontras, Maarten Vanmarck, Maarten De Vos, Ila R Fiete, Paul Pu Liang. **B[FM]²: Brain Foundation Model via Flow Matching with SplitUNet**. arXiv. 2026.

Konstantinos Kontras*, Trui Osselaer*, Stylianos G. Mouslech*, Angeliki-Ilektra Karaiskou*, Guido Gagliardi*, Thomas Strypsteen, Mohammad Hossein Badieli, Anku Rani, Maarten Vanmarcke, Miguel Bhagubai, Chanakya Ekbote, [Jaedong Hwang](#), Christos Chatzichristos, Paul Pu Liang, Maarten De Vos. **NeuroAtlas: Benchmarking Foundation Models for Clinical EEG and Brain-Computer Interfaces**. arXiv. 2026.

Ari S. Benjamin*, Anna-Lea Beyer*, Marianne de Heer Kloots*, [Jaedong Hwang](#)*, Hajer Karoui*, Mitchell Ostrow*, Jirko Rubruck*, Kai Sandbrink*, Satchel Grant, Andrew Saxe, James L. McClelland. **An Introduction to Connectionist Theories of Semantic Cognition**. PMLR. Vol. 320, 202. 2026.

[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**. NeurIPSW (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 (Full Funding)	2021 - 2026
Government Scholarship for Overseas Study by South Korean Gov. (\$40,000 / year)	2021 - 2023 (declined)
MIT ORCD Seed Fund (half of tuition, stipends, and up to 32 H100 GPU)	Spring 2026
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

Meta Reality Lab , Burlingame, CA <i>Research Scientist Intern</i> , Mentor: Wei Wen	May 2026 - Aug 2026
Adobe Research , Adobe, CA <i>Deep Learning Research Intern</i> , Mentor: Joon-Young Lee, Seoung Wug Oh	Jun 2020 - Mar 2021
Computer Vision Lab , Seoul National University, Korea <i>Research Intern</i> , Advisor: Bohyung Han	Sep 2018 - Aug 2019
T-Brain , SKT, Korea <i>Research Intern</i>	May 2018 - Aug 2018
CLVR , University of Southern California, CA <i>Visiting Student</i> , Advisor: Joseph Lim	Mar 2018 - May 2018
Cybercrime Investigation Unit , Seoul Metropolitan Police Agency, Korea <i>Investigator</i> as secondment of military service	2015 - 2017
BioIntelligence Lab , Seoul National University, Korea <i>Research Intern</i> , Advisor: Byeong-Tak Zhang	Jul 2014 - Apr 2015

ACADEMIC SERVICES

AI Conference Reviewer: NeurIPS, ICLR, ICML, CVPR, ECCV, ICCV, WACV, AAAI
Neuroscience Conference Reviewer: CCN

Journal Reviewer: TPAMI, TMLR
Volunteer: ICLR 2020

TEACHING EXPERIENCE	Computational Sensorimotor Learning , MIT <i>Teaching Assistant</i> Instructor: Pulkit Agrawal	Spring 2024
	The Graduate Application Assistance Program , MIT EECS <i>Mentor</i> Mentored applicants (especially from underrepresented groups) about the graduate application process.	2021 - 2023
	Digital Computer Concept and Practice , Seoul National University <i>Teaching Assistant</i> Instructor: Bohyung Han Instructed laboratory classes regarding Python and basic programming.	Spring 2020
INVITED PRESENTATIONS	Annual Meeting of the Korean Society for Brain and Neural Sciences, Korea	Sep 2026
	Voxel 51 Boston Meetup, Boston, MA	Feb 2025
	Artificial Intelligence Institute at Seoul National University, Korea	Jun 2023
	Samsung Electronics, Korea	Aug 2021