

CONTACT INFORMATION	UNIVERSITY OF NORTH CAROLINA, CHAPEL HILL, NC E-MAIL: <a href="mailto:jhyoon@cs.unc.edu">jhyoon@cs.unc.edu</a> LINKS: <a href="#">HOMEPAGE</a> , <a href="#">GOOGLE SCHOLAR</a> , <a href="#">TWITTER</a>	
RESEARCH INTERESTS	I've been focusing on tackling practical and real-world challenges to understand humans and impact our real lives through ever-evolving embodied AI systems with multiple agents & modalities. My research interest includes the following topics: <ul style="list-style-type: none"> <li>• <a href="#">Multimodal/Video Large Language Models</a>: Comprehension, Generation, and Faithfulness</li> <li>• <a href="#">Compositional Generalization</a>: Continual Learning and Compositional Reasoning</li> <li>• <a href="#">Efficient Training/Inference</a>: Parameter-efficient Learning, Model Compression, and Federated Learning</li> </ul>	
RESEARCH EXPERIENCE	Postdoctoral Research Associate, UNC Chapel-Hill, NC Advisor: <a href="#">Prof. Mohit Bansal</a>	<b>08/2023 - Current</b>
	Postdoctoral Research Associate, KAIST, South Korea Advisor: <a href="#">Prof. Sung Ju Hwang</a>	03/2023 - 08/2023
	Visiting Student, Weizmann Institute of Science, Israel Host: <a href="#">Prof. Yonina Eldar</a>	10/2022 - 11/2022
	Research Intern, Microsoft Research, China Visual Computing Group Mentor: <a href="#">Dr. Yue Cao</a>	11/2021 - 04/2022
	Research Scientist, MLAI Lab., KAIST, South Korea	02/2018 - 08/2018
EDUCATION	<a href="#">KAIST</a> , Daejeon, South Korea Ph.D., School of Computing, Aug 2018 - Feb 2023 <ul style="list-style-type: none"> <li>• Thesis: <i>"On-device, Online Continual Learning for the Real World"</i></li> <li>• <a href="#">The Best Ph.D. Dissertation Award</a> from KAIST College of Engineering</li> <li>• <a href="#">The Best Ph.D. Dissertation Award</a> from KAIST School of Computing</li> <li>• <a href="#">Machine Learning and Artificial Intelligence (MLAI) Lab</a></li> <li>• Adviser: <a href="#">Prof. Sung Ju Hwang</a></li> <li>• Area of Study: Machine Learning</li> </ul>	
	<a href="#">UNIST</a> , Ulsan, South Korea M.S., Computer Science, Aug 2016 - Feb 2018 <ul style="list-style-type: none"> <li>• Thesis: <i>"Combined Group and Exclusive Sparsity for Deep Neural Networks"</i></li> <li>• Adviser: <a href="#">Prof. Sung Ju Hwang</a></li> <li>• Area of Study: Machine Learning</li> </ul>	
	B.S., Computer Science Engineering, Mar 2012 - Aug 2016 <ul style="list-style-type: none"> <li>• Biological Science Minor</li> </ul>	
CONFERENCE PUBLICATIONS	*: equal contribution [C22] <i>Mementos: A Comprehensive Benchmark for Multimodal Large Language Model Reasoning over Image Sequences</i> Xiyao Wang, Yuhang Zhou, Xiaoyu Liu, Hongjin Lu, Yuancheng Xu, Feihong He, <a href="#">Jaehong Yoon</a> , Taixi Lu, Gedas Bertasius, Mohit Bansal, Huaxiu Yao, and Furong Huang Annual Meeting of the Association for Computational Linguistics ( <a href="#">ACL</a> ) <b>2024</b> , Bangkok, Thailand	

- [C21] *STELLA: Continual Audio-Video Pre-training with Spatio-Temporal Localized Alignment*  
Jaewoo Lee\*, [Jaehong Yoon\\*](#), Wonjae Kim, Yunji Kim, and Sung Ju Hwang  
CVPR 2024 Workshop on Continual Learning (CLVision)  
International Conference on Machine Learning ([ICML](#)) 2024, Vienna, Austria
- [C20] *EVEREST: Efficient Masked Video Autoencoder by Removing Redundant Spatiotemporal Tokens*  
Sunil Hwang\*, [Jaehong Yoon\\*](#), Youngwan Lee\*, and Sung Ju Hwang  
CVPR 2024 Workshop on Transformers for Vision (T4V), [Spotlight Presentation](#)  
International Conference on Machine Learning ([ICML](#)) 2024, Vienna, Austria
- [C19] *BECOTTA: Input-dependent Online Blending of Experts for Continual Test-time Adaptation*  
Daeun Lee\*, [Jaehong Yoon\\*](#), and Sung Ju Hwang  
CVPR 2024 Workshop on Test-Time Adaptation  
International Conference on Machine Learning ([ICML](#)) 2024, Vienna, Austria
- [C18] *Carpe Diem: On the Evaluation of World Knowledge in Lifelong Language Models*  
Yujin Lee, [Jaehong Yoon](#), Seonghyeon Ye, Sangmin Bae, Namgyu Ho, Sung Ju Hwang, and Se Young Yun  
NeurIPS 2023 Workshop on Synthetic Data Generation with Generative AI, [Oral](#)  
The North American Chapter of the Association for Computational Linguistics ([NAACL](#)) 2024, Mexico City, Mexico
- [C17] *Multimodal Representation Learning by Alternating Unimodal Adaptation*  
XiaoHui Zhang, [Jaehong Yoon](#), Mohit Bansal, and Huaxiu Yao  
The IEEE/CVF Computer Vision and Pattern Recognition Conference ([CVPR](#)) 2024, Seattle, Washington
- [C16] *ECofLaP: Efficient Coarse-to-Fine Layer-Wise Pruning for Vision-Language Models*  
Yi-lin Sung, [Jaehong Yoon](#), and Mohit Bansal  
International Conference on Learning Representations ([ICLR](#)) 2024, Vienna, Austria
- [C15] *Analyzing and Mitigating Object Hallucination in Large Vision-Language Models*  
Yiyang Zhou\*, Chenhang Cui\*, [Jaehong Yoon](#), Linjun Zhang, Chelsea Finn, Mohit Bansal, and Huaxiu Yao  
NeurIPS 2023 Workshop on Instruction Tuning and Instruction Following  
International Conference on Learning Representations ([ICLR](#)) 2024, Vienna, Austria
- [C14] *Progressive Fourier Neural Representation for Sequential Video Compilation*  
Haeyong Kang, [Jaehong Yoon](#), Dahyun Kim, Sung Ju Hwang, and Chang D. Yoo  
International Conference on Learning Representations ([ICLR](#)) 2024, Vienna, Austria
- [C13] *Text-Guided Token Selection for Text-to-Image Synthesis with Token-based Diffusion Models*  
Jaewoong Lee\*, Sangwon Jang\*, Jaehyeong Jo, [Jaehong Yoon](#), Yunji Kim, Jin-Hwa Kim, Jung-Woo Ha, Sung Ju Hwang  
International Conference on Computer Vision ([ICCV](#)) 2023, Paris, France
- [C12] *Continual Learners are Incremental Model Generalizers*  
[Jaehong Yoon](#), Sung Ju Hwang, Yue Cao  
International Conference on Machine Learning ([ICML](#)) 2023, Hawaii, USA
- [C11] *Personalized Subgraph Federated Learning*  
Jinheon Baek\*, Wonyong Jeong\*, Jiongdao Jin, [Jaehong Yoon](#), and Sung Ju Hwang  
International Conference on Machine Learning ([ICML](#)) 2023, Hawaii, USA
- [C10] *On the Soft-Subnetwork for Few-shot Class Incremental Learning*  
Haeyong Kang, [Jaehong Yoon](#), Sultan Madjid, Sung Ju Hwang, Chang D. Yoo  
International Conference on Learning Representations ([ICLR](#)) 2023, Kigali, Rwanda

- [C9] *Bitwidth Heterogeneous Federated Learning with Progressive Weight Dequantization*  
[Jaehong Yoon\\*](#), Geon Park\*, Wonyong Jeong, and Sung Ju Hwang  
 International Conference on Machine Learning (ICML) 2022, Baltimore, USA
- [C8] *Forget-free Continual Learning with Winning Subnetworks*  
 Haeyong Kang\*, Rusty Mina\*, Sultan Madjid, [Jaehong Yoon](#), Mark Hasegawa-Johnson, Sung Ju Hwang, and Chang D. Yoo  
 International Conference on Machine Learning (ICML) 2022, Baltimore, USA
- [C7] *Rethinking the Representational Continuity: Towards Unsupervised Continual Learning*  
 Divyam Madaan, [Jaehong Yoon](#), Yuanchun Li, Yunxin Liu, and Sung Ju Hwang  
 International Conference on Learning Representations (ICLR) 2022, Virtual  
**Oral Presentation (Acceptance Rate = 54/3391 = 1.6%)**
- [C6] *Online Coreset Selection for Rehearsal-based Continual Learning*  
[Jaehong Yoon](#), Divyam Madaan, Eunho Yang, and Sung Ju Hwang  
 International Conference on Learning Representations (ICLR) 2022, Virtual
- [C5] *Federated Continual Learning with Weighted Inter-client Transfer*  
[Jaehong Yoon\\*](#), Wonyong Jeong\*, Giwoong Lee, Eunho Yang, and Sung Ju Hwang  
 ICML 2020 Workshop on Lifelong Machine Learning Workshop  
 International Conference on Machine Learning (ICML) 2021, Virtual
- [C4] *Federated Semi-supervised Learning with Inter-Client Consistency & Disjoint Learning*  
 Wonyong Jeong, [Jaehong Yoon](#), Eunho Yang, and Sung Ju Hwang  
 ICML 2020 Workshop on Federated Learning for User Privacy and Data Confidentiality Workshop, **Long Presentation, Best Student Paper Award**  
 International Conference on Learning Representations (ICLR) 2021, Virtual
- [C3] *Scalable and Order-robust Continual Learning with Additive Parameter Decomposition*  
[Jaehong Yoon](#), Saehoon Kim, Eunho Yang, and Sung Ju Hwang  
 International Conference on Learning Representations (ICLR) 2020, Addis ababa, Ethiopia, Virtual
- [C2] *Lifelong Learning with Dynamically Expandable Networks*  
[Jaehong Yoon](#), Eunho Yang, Jeongtae Lee, and Sung Ju Hwang  
 International Conference on Learning Representations (ICLR) 2018, Vancouver, Canada
- [C1] *Combined Group and Exclusive Sparsity for Deep Neural Networks*  
[Jaehong Yoon](#) and Sung Ju Hwang  
 International Conference on Machine Learning (ICML) 2017, Sydney, Australia

#### PREPRINTS

- [P8] *RACCOON: Remove, Add, and Change Video Content with Auto-Generated Narratives*  
[Jaehong Yoon\\*](#), Shoubin Yu\*, and Mohit Bansal  
 submitted, 2024.
- [P7] *VideoTree: Adaptive Tree-based Video Representation for LLM Reasoning on Long Videos*  
 Ziyang Wang\*, Shoubin Yu\*, Elias Stengel-Eskin\*, [Jaehong Yoon](#), Feng Cheng, Gedas Bertasius, Mohit Bansal  
 submitted, 2024.
- [P6] *Blindness and Hallucinations: Revisiting Multi-modal Alignment in Vision-Language Large Models*  
 Xinyu Yang, Chenhang Cui, [Jaehong Yoon](#), Yiyang Zhou, Yi-Lin Sung, Mohit Bansal, Beidi Chen, and Huaxiu Yao  
 submitted, 2024.

	<p>[P5] <i>EnvGen: Bootstrapping Embodied Agent Training with LLM-Generated Environments</i>  Abhay Zala, Jaemin Cho, Han Lin, <a href="#">Jaehong Yoon</a>, and Mohit Bansal  arXiv:2403.12014, 2024.</p> <p>[P4] <i>SELMA: Learning and Merging Skill-Specific Text-to-Image Experts with Auto-Generated Data</i>  Jialu Li, Jaemin Cho, Yi-lin Sung, <a href="#">Jaehong Yoon</a>, and Mohit Bansal  arXiv:2403.06952, 2024.</p> <p>[P3] <i>CREMA: Generalizable and Efficient Video-Language Reasoning via Multimodal Modular Fusion</i>  Shoubin Yu*, <a href="#">Jaehong Yoon*</a>, and Mohit Bansal  arXiv:2402.05889, 2024.</p> <p>[P2] <i>Rapid Structural Pruning of Neural Networks with Set-based Task-Adaptive Meta-Pruning</i>  Minyoung Song, <a href="#">Jaehong Yoon</a>, Eunho Yang, and Sung Ju Hwang  arXiv:2006.12139, 2020.</p> <p>[P1] <i>Adaptive Network Sparsification with Dependent Beta-Bernoulli Dropout</i>  Juho Lee, Saehoon Kim, <a href="#">Jaehong Yoon</a>, Haebeom Lee, Eunho Yang, and Sung Ju Hwang  arXiv:1805.10896, 2018.</p>
WORKSHOP PRESENTATIONS	<p>[W1] <i>BiTAT: Neural Network Binarization with Task-dependent Aggregated Transformation</i>  Geon Park*, <a href="#">Jaehong Yoon*</a>, Haiyang Zhang, Xing Zhang, Sung Ju Hwang, and Yonina C. Eldar  <a href="#">ECCV 2022</a> Workshop on Computational Aspects of Deep Learning (CADL)</p>
PATENTS (US ONLY)	<p><i>Method and Apparatus with Neural Network and Training</i>  <a href="#">Jaehong Yoon</a>, Saehoon Kim, Eunho Yang, and Sung Ju Hwang  US 20210256374 A1, Aug 2021</p> <p><i>Electronic Apparatus and Method for Re-learning Trained Model</i>  <a href="#">Jaehong Yoon</a>, Eunho Yang, Jeongtae Lee, and Sung Ju Hwang  US 20180357539 A1, Dec 2018</p>
PROFESSIONAL SERVICES	<p><b>Area Chair</b>  2024 <i>Conference on Empirical Methods in Natural Language Processing</i> (<a href="#">EMNLP</a>)</p> <p><b>Reviewer</b>  2018, 2019, 2020, 2021, 2022, 2023, 2024 <i>Neural Information Processing System</i> (<a href="#">NeurIPS</a>)  2019, 2020, 2021, 2022, 2023, 2024 <i>International Conference on Machine Learning</i> (<a href="#">ICML</a>)  2019, 2020, 2021, 2022, 2023, 2024 <i>International Conference on Learning Representations</i> (<a href="#">ICLR</a>)  2022, 2023, 2024 <i>Conference on Lifelong Learning Agents</i> (<a href="#">CoLLAs</a>)  2020 <i>International Joint Conferences on Artificial Intelligence</i> (<a href="#">IJCAI</a>)  2020 <i>Association for the Advancement of Artificial Intelligence</i> (<a href="#">AAAI</a>)</p> <p>2022 <i>Journal of Artificial Intelligence Research</i> (<a href="#">JAIR</a>)  2020, 2022 <i>IEEE Transactions on Neural Networks and Learning Systems</i> (<a href="#">TNNLS</a>)  2021, 2023 <i>IEEE Transactions on Pattern Analysis and Machine Intelligence</i> (<a href="#">TPAMI</a>)  2021 <i>IEEE/ACM Transactions on Networking</i> (<a href="#">ToN</a>)  2020 <i>Neural Networks</i> (<a href="#">NN</a>)</p>

AWARDS	The Best Ph.D. Dissertation Award from KAIST College of Engineering, 2023
	The Best Ph.D. Dissertation Award from KAIST School of Computing, 2023
	NeurIPS Top Reviewers Award, 2019
	NAVER Ph.D. Fellowship Award, 2017
INVITED TALKS	<i>Large-scale Multimodal Learning: Continuity, Efficiency, and Unification</i> A.I. Graduate School, UNIST, 2024
	<i>Lightweight Video &amp; Multimodal Learning</i> LG AI, 2023
	<i>Towards Continuously Evolving AI</i> Edinburgh University, 2023
	<i>Federated and Continual Learning with Heterogeneous Clients</i> Prof. Eric Xing's Group, CMU & MBZUAI, 2023
	<i>Online Coreset Selection for Rehearsal-based Conitnual Learning</i> Prof. Kristin Grauman's Group, UT Austin, 2022
	<i>Representational Continuity for Unsupervised Continual Learning</i> Korea Computer Congress (KCC), 2022
	<i>Lifelong Learning with Dynamically Expandable Networks</i> Samsung SDS, 2019 Tech. Talk from NAVER Corp., 2018 Tech. Open Connect (T-T.O.C) from SK-Telecom, 2018
	<i>Combined Group and Exclusive Sparsity for Deep Neural Networks</i> Korea Software Congress (KSC), 2017
REFERENCES	<b>Prof. Mohit Bansal</b> , Professor, University of North Carolina (UNC) Chapel Hill, US Email: <a href="mailto:mbansal@cs.unc.edu">mbansal@cs.unc.edu</a>
	<b>Prof. Sung Ju Hwang</b> , Associate Professor, KAIST, South Korea Email: <a href="mailto:sjhwang82@kaist.ac.kr">sjhwang82@kaist.ac.kr</a>
	<b>Prof. Eunho Yang</b> , Associate Professor, KAIST, South Korea Email: <a href="mailto:eunhoy@kaist.ac.kr">eunhoy@kaist.ac.kr</a>
	<b>Dr. Yue Cao</b> , Senior Researcher, Mircosoft Research Asia, China Email: <a href="mailto:caoyue10@gmail.com">caoyue10@gmail.com</a>
	<b>Prof. Yonina Eldar</b> , Professor, Weizmann Institute of Science, Israel Email: <a href="mailto:yonina.eldar@weizmann.ac.il">yonina.eldar@weizmann.ac.il</a>