

Jaehong Yoon

CONTACT INFORMATION

KAIST, South Korea
E-MAIL: jaehong.yoon@kaist.ac.kr
LINKS: [HOMEPAGE](#), [GOOGLE SCHOLAR](#), [TWITTER](#)

RESEARCH INTERESTS

My research interest mainly focuses on developing novel models and algorithms for tackling practical challenges in deploying **on-device artificial general intelligence system to various real-world application domains**. I currently focus on the following topics:

- Continual learning, Lifelong learning
- Network pruning & Quantization
- Federated learning
- Unsupervised, Self-supervised representation learning
- Learning with biased and noisy inputs

EDUCATION

[KAIST](#), Daejeon, South Korea

Ph.D. student, School of Computing,

Aug 2018 - Current

- Adviser: Professor Sung Ju Hwang
- Area of Study: Machine Learning
- Anticipated Graduation Date: **Feb 2023**

[UNIST](#), Ulsan, South Korea

M.S., Computer Science,

Aug 2016 - Feb 2018

- Thesis: *Combined Group and Exclusive Sparsity for Deep Neural Networks*
- Adviser: Professor Sung Ju Hwang
- Area of Study: Machine Learning

B.S., Computer Science Engineering,

Mar 2012 - Aug 2016

- Biological Science Minor

RESEARCH EXPERIENCE

Microsoft Research, Beijing, China

RESEARCH INTERNSHIP

Nov 2021 - Apr 2022

- Visual Computing Group
- Research topic: Vision transformers for continual learning
- Mentor: [Yue Cao](#)

MLAI Lab., **KAIST**, Daejeon, South Korea

CONTRACT RESEARCH SCIENTIST

Feb 2018 - Aug 2018

- Research topic: Efficient data sampling to accelerate the convergence

AITRICS, Seoul, South Korea

RESEARCH INTERNSHIP

Mar 2018 - May 2018

- Research topic: Structured weight transformation for continual learning

ONGOING PROJECTS	Vision Transformers for Continual Learning Jaehong Yoon , Minseon Kim, Sung Ju Hwang, and Yue Cao working on, 2022.
	Bitwidth Heterogeneous Federated Learning via Hierarchical Multi-View De-quantization Jaehong Yoon *, Geon Park*, Wonyong Jeong, and Sung Ju Hwang (*: equal contribution) working on, 2022.
	Balanced Model Pruning and Quantization via Input-dependent Vector Importance Geon Park*, Jaehong Yoon *, Haiyang Zhang, Xing Zhang, Sung Ju Hwang, and Yonina C. Eldar (*: equal contribution) working on, 2022.
IN SUBMISSION	[S2] Rethinking the Representational Continuity: Towards Unsupervised Continual Learning Divyam Madaan, Jaehong Yoon , Yuanchun Li, Yunxin Liu, and Sung Ju Hwang Submitted to ICLR 2022 , Review scores: [8, 8, 8, 8] , Dec 2021
	[S1] Online Coreset Selection for Rehearsal-based Continual Learning Jaehong Yoon , Divyam Madaan, Eunho Yang, and Sung Ju Hwang Submitted to ICLR 2022 , Review scores: [8, 6, 6, 5] , Dec 2021
CONFERENCE PUBLICATIONS	[C5] Federated Continual Learning with Weighted Inter-client Transfer Jaehong Yoon *, Wonyong Jeong*, Giwoong Lee, Eunho Yang, and Sung Ju Hwang (*: equal contribution) International Conference on Machine Learning (ICML) 2021 , Virtual
	[C4] Federated Semi-supervised Learning with Inter-Client Consistency & Dis-joint Learning Wonyong Jeong, Jaehong Yoon , Eunho Yang, and Sung Ju Hwang 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	[P2] Rapid Structural Pruning of Neural Networks with Set-based Task-Adaptive Meta-Pruning Minyoung Song, Jaehong Yoon , Eunho Yang, and Sung Ju Hwang arXiv:2006.12139, 2020.
	[P1] Adaptive Network Sparsification with Dependent Beta-Bernoulli Dropout Juho Lee, Saehoon Kim, Jaehong Yoon , Haebeom Lee, Eunho Yang, and Sung Ju Hwang arXiv:1805.10896, 2018.

WORKSHOP PRESENTATIONS	[W2] Federated Semi-supervised Learning with Inter-client Consistency Wonyong Jeong, Jaehong Yoon , Eunho Yang, and Sung Ju Hwang ICML Workshop on Federated Learning for User Privacy and Data Confidentiality, ICML 2020, Long Presentation , Best Student Paper Award
	[W1] Federated Continual Learning with Weighted Inter-client Transfer Jaehong Yoon* , Wonyong Jeong*, Giwoong Lee, Eunho Yang, and Sung Ju Hwang (*: equal contribution) ICML Workshop on Lifelong Machine Learning, ICML 2020
PATENTS (US ONLY)	Method and Apparatus with Neural Network and Training Jaehong Yoon , Saehoon Kim, Eunho Yang, and Sung Ju Hwang US 20210256374 A1, Aug 2021
	Electronic Apparatus and Method for Re-learning Trained Model Jaehong Yoon , Eunho Yang, Jeongtae Lee, and Sung Ju Hwang US 20180357539 A1, Dec 2018
REVIEWER SERVICES	INTERNATIONAL CONFERENCES <ul style="list-style-type: none"> • 2019 – 2022 <i>International Conference on Learning Representations</i> (ICLR) • 2018 – 2021 <i>Neural Information Processing System</i> (NEURIPS) • 2019 – 2021 <i>International Conference on Machine Learning</i> (ICML) • 2020 <i>International Joint Conferences on Artificial Intelligence</i> (IJCAI) • 2020 <i>Association for the Advancement of Artificial Intelligence</i> (AAAI)
	INTERNATIONAL JOURNALS <ul style="list-style-type: none"> • 2021 <i>IEEE Transactions on Pattern Analysis and Machine Intelligence</i> (TPAMI) • 2021 <i>IEEE/ACM Transactions on Networking</i> (TON) • 2020 <i>IEEE Transactions on Neural Networks and Learning Systems</i> (TNNLS) • 2020 <i>Neural Networks</i>
AWARDS	NAVER Ph.D. Fellowship Award, 2017
INVITED TALKS	LIFELONG LEARNING WITH DYNAMICALLY EXPANDABLE NETWORKS <ul style="list-style-type: none"> • Samsung SDS, 2019 • Tech. Talk from NAVER Corp., 2018 • Tech. Open Connect (T-T.O.C) from SK-Telecom, 2018
	COMBINED GROUP AND EXCLUSIVE SPARSITY FOR DEEP NEURAL NETWORKS <ul style="list-style-type: none"> • Korea Software Congress (KSC), 2017
REFERENCES	<ul style="list-style-type: none"> • Prof. Sung Ju Hwang, Professor, KAIST Email: sjhwang82@kaist.ac.kr • Prof. Eunho Yang, Associate Professor, KAIST Email: eunhoy@kaist.ac.kr • Yue Cao, Senior Researcher, Microsoft Research Asia Email: yue.cao@microsoft.com