## Jaehong Yoon


**Contact Information**

KAIST, South Korea
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Links: Homepage, Google Scholar


**Research Interests**

My research interest mainly focuses on developing novel models and algorithms for tackling practical challenges in deploying **on-device artificial intelligence systems 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 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

**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**

- Research topic: On-device real-time 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

## Conference Publications

**J. Yoon***, W. Jeong*, G. Lee, E. Yang, and S. J. Hwang, "Federated Continual Learning with Weighted Inter-client Transfer", In International Conference on Machine Learning **(ICML) 2021**, Online (*: equal contribution)

W. Jeong, **J. Yoon**, E. Yang, and S. J. Hwang, "Federated Semi-supervised Learning with Inter-Client Consistency & Disjoint Learning", In International Conference on Learning Representations **(ICLR) 2021**, Online

**J. Yoon**, S. Kim, E. Yang and S. J. Hwang, "Scalable and Order-robust Continual Learning with Additive Parameter Decomposition", In International Conference on Learning Representations **(ICLR) 2020**, Online

**J. Yoon**, E. Yang, J. Lee and S. J. Hwang, "Lifelong Learning with Dynamically Expandable Networks", In International Conference on Learning Representations **(ICLR) 2018**, Vancouver, Canada

**J. Yoon** and S. J. Hwang, "Combined Group and Exclusive Sparsity for Deep Neural Networks", In International Conference on Machine Learning **(ICML) 2017**, Sydney, Australia

## Preprints

G. Park*, **J. Yoon***, W. Jeong, and S. J. Hwang, "SSID: Bitwidth-free Federated Learning via Score-based Selective Aggregation and Invertible Dequantizer", In submission, 2021. (*: equal contribution)

D. Madaan, **J. Yoon**, Y. Li, Y. Liu, and S. J. Hwang, "Rethinking the Representational Continuity: Towards Unsupervised Continual Learning", In submission, 2021.

**J. Yoon**, D. Madaan, E. Yang, and S. J. Hwang, "Online Coreset Selection for Rehearsal-based Continual Learning", arXiv:2106.01085, 2021.

M. Song, **J. Yoon**, E. Yang, and S. J. Hwang, "Rapid Structural Pruning of Neural Networks with Set-based Task-Adaptive Meta-Pruning", arXiv:2006.12139, 2020.

J. Lee, S. Kim, **J. Yoon**, H. Lee, E. Yang, and S. J. Hwang, "Adaptive Network Sparsification with Dependent Beta-Bernoulli Dropout", arXiv:1805.10896, 2018.

## Workshop Presentations

W. Jeong, **J. Yoon**, E. Yang, and S. J. Hwang, "Federated Semi-supervised Learning with Inter-client Consistency", **ICML Workshop** on Federated Learning for User Privacy and Data Confidentiality, ICML 2020 (**Long Presentation**) (**Best Student Paper Award**)

**J. Yoon***, W. Jeong*, G. Lee, E. Yang, and S. J. Hwang, "Federated Continual Learning with Weighted Inter-client Transfer", **ICML Workshop** on Lifelong Machine Learning, ICML 2020 (*: equal contribution)

## Patents (US only)

**J. Yoon**, S. Kim, E. Yang, and S.J. Hwang, Method and Apparatus with Neural Network and Training, US 20210256374 A1, Aug 2021

**J. Yoon**, E. Yang, J. Lee, and S.J. Hwang, Electronic Apparatus and Method for Relearning Trained Model, US 20180357539 A1, Dec 2018

## Reviewer Services

### International Conferences

- 2018, 2019, 2020, 2021 *Neural Information Processing System* (NeurIPS)
- 2019, 2020, 2021 *International Conference on Learning Representations* (ICLR)
- 2019, 2020, 2021 *International Conference on Machine Learning* (ICML)
- 2020 *International Joint Conferences on Artificial Intelligence* (IJCAI)
- 2020 *Association for the Advancement of Artificial Intelligence* (AAAI)

### International Journals

- 2021 *IEEE/ACM Transactions on Networking* (ToN)
- 2020 *IEEE Transactions on Neural Networks and Learning Systems* (TNNLS)
- 2020 *Neural Networks*

## Awards

NAVER

- NAVER Ph.D. Fellowship Award, 2017

## Invited Talks

### Lifelong Learning with Dynamically Expandable Networks

- 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

- Korea Software Congress (KSC), 2017

## References


- **Prof. Sung Ju Hwang**, Professor, KAIST
  Email: sjhwang82@kaist.ac.kr
- **Prof. Eunho Yang**, Professor, KAIST
  Email: eunhoy@kaist.ac.kr


## Citizenship

- Republic of Korea

## Date of Birth

- March 31th, 1993