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 Asia , Beijing, China, Online

RESEARCH INTERNSHIP **Nov 2021 - Apr 2022**

- Research topic: Learning on the edge, on-device real-time continual learning

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