Jaehong Yoon

Contact

KAIST, South Korea

Information

E-MAIL: jaehong.yoon@kaist.ac.kr 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 HwangArea 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
- $\bullet\,$ 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