Gordon Euhyun Moon

Contact Information

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Research Interests

Machine Learning, High Performance Computing

Education

The Ohio State University, Columbus, OH USA

Ph.D. in Computer Science and Engineering, 2019

Adviser: Ponnuswamy Sadayappan

Indiana University, Bloomington, IN USA

M.S. Computer Science, 2013

Yonsei University, Seoul, South Korea

B.S. in Computer Science & Industrial Engineering, 2011

Professional Appointments

Sogang University, Seoul, South Korea

Associate Professor - Computer Science and Engineering 2025–present
Assistant Professor - Computer Science and Engineering 2022–2025

Korea Aerospace University, Goyang, South Korea

Assistant Professor - Software Department 2021–2022

Sandia National Laboratories, Albuquerque, NM USA

Postdoctoral Researcher - Center for Computing Research 2019–2021

Research Grants

National Research Foundation of Korea (NRF), PI, ₩850,000,000, Optimizing Distributed Deep Learning and Federated Learning for Accelerating Large-Scale Deep Learning Models, 2024–2027

National Research Foundation of Korea (NRF), Co-PI, ₩1,500,000,000, Developing a High-Performance Computing-Data Platform for Accelerating Large-Scale Machine Learning (PI: Young-jae Kim), 2024–2027

National Research Foundation of Korea (NRF), PI, Architecture-aware Parallel Algorithms for Accelerating Training of Deep Neural Networks, 2021–2024

Awards

Outstanding Teaching Award, Sogang University, 2023
Graduate Fellowship, Indiana University, 2011–2012

Teaching

CSE 6473: Advanced GPU Programming (Fall 2024)
CSE 4200: Recommender Systems (Fall 2024)
CSE 3030: Introduction to Computer Systems (Spring 2024), **Outstanding Teaching Award**
COR 1010: AI Programming (Spring 2024)
CSE 6473: Advanced GPU Programming (Fall 2023)
CSE 4070: Operating Systems (Fall 2023)
CSE 3030: Introduction to Computer Systems (Spring 2023)
COR 1010: AI Programming (Spring 2023)

CSE 2035: Computer Programming II (Fall 2022)
CSE 4070: Operating Systems (Fall 2022)
KAU SW 4432: Recommender Systems (Spring 2022)
KAU SW 4206: AI Programming (Spring 2022)
KAU SW 4429: Parallel Computing (Fall 2021)
KAU SW 4205: System Programming (Fall 2021)
KAU SW 4206: AI Programming (Spring 2021)

Selected Publications

EQUILIBRIA: Co-Optimizing Energy and Latency in Online ML-based Stream Processing Systems
Sejeong Oh, Soyang Baek, **Gordon E. Moon** and Sungyong Park
To Appear in Proceedings of the 25th IEEE International Symposium on Cluster, Cloud and Internet Computing (CCGrid 2025)

ML-based Dynamic Operator-Level Query Mapping for Stream Processing Systems in Heterogeneous Computing Environments
Sejeong Oh, **Gordon E. Moon** and Sungyong Park
Proceedings of the IEEE International Conference on Cluster Computing (CLUSTER 2024)

Accelerated Block-Sparsity-Aware Matrix Reordering for Leveraging Tensor Cores in Sparse Matrix–Multivector Multiplication
Eunji Lee, Yoonsang Han and **Gordon E. Moon**
Proceedings of the 30th International European Conference on Parallel and Distributed Computing (Euro-Par 2024)

Layer-Wise Sparse Training of Transformer via Convolutional Flood Filling
Bokyeong Yoon, Yoonsang Han and **Gordon E. Moon**
Proceedings of the 28th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2024)

Chronica: A Data-Imbalance-Aware Scheduler for Distributed Deep Learning
Sanha Maeng, **Gordon E. Moon** and Sungyong Park
Proceedings of the 23rd IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing (CCGrid 2023)

Parallel Training of GRU Networks with a Multi-Grid Solver for Long Sequences
Gordon E. Moon and Eric C. Cyr
Proceedings of the 10th International Conference on Learning Representations (ICLR 2022)

Extending Sparse Tensor Accelerators to Support Multiple Compression Formats
Eric Qin, Geonhwa Jeong, William Won, Sheng-Chun Kao, Hyoukjun Kwon, Sudarshan Srinivasan, Dipankar Das, **Gordon E. Moon**, Sivasankaran Rajamanickam and Tushar Krishna
Proceedings of the 35th IEEE International Parallel & Distributed Processing Symposium (IPDPS 2021)

ALO-NMF: Accelerated Locality-Optimized Non-negative Matrix Factorization
Gordon E. Moon, J. Austin Ellis, Aravind Sukumaran-Rajam, Srinivasan Parthasarathy and P. Sadayappan
Proceedings of the 26th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2020)

Professional Service

Program Committee Member, The 40^{th} IEEE International Conference on Computer Design (ICCD 2022)
Program Committee Member, Tenth International Workshop on Accelerating Analytics and Data

Management Systems Using Modern Processor and Storage Architectures (ADMS 2019)

Invited Talks

HPC Society Conference, KIISE, July 2024
HPC Society Conference, KIISE, July 2022
KCC 2022, KIISE, June 2022
Computer System Society Conference 2022, The Korean Institute of Information Scientists and Engineers (KIISE), February 2022
NVIDIA GTC'21, November 2021
AMS Fall Western Virtual Sectional Meeting, October 2021
SIAM Conference on Computational Science and Engineering, March 2021
Sandia National Laboratories, August 2019

Ph.D. Students

Yoonsang Han
Ah-Hyun Lee

M.S. Students

Juhyeon Lee
Bokki Min
Sangwon Bae
Kisun Seo

Alumni

Eunji Lee (M.S., Sogang University, 2025)
Cheolhee Kim (M.S., Sogang University, 2024)
Bokyeong Yoon (M.S., Sogang University, 2024, Joined The Ohio State University for Ph.D. in Computer Science and Engineering under the supervision of Professor Martin Kong)