

DO YEONG KANG

Green Lab., Dept. of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA, USA
[🌐 LinkedIn](#) · [✉ dykang@gatech.edu](mailto:dykang@gatech.edu) · [🏠 Homepage](#)

RESEARCH INTEREST

- Multi Agent Systems (MAS) & Efficient Multi Agent Communication
- Low Rank Approximation & Tensor Decomposition
- Adaptive Inference & System-Level Optimization

EXPERIENCE

- Present** | **Ph.D. in Electrical and Computer Engineering**
Georgia Institute of Technology, Atlanta, GA, USA
- 2026
- Efficient multi agent communication
 - Behavioral alignment metric between small (compressed) and large models
 - Model optimization for video diffusion models
- Advised by Prof. Saibal Mukhopadhyay
- 2026 | **M.S. in Electrical and Computer Engineering**
Sungkyunkwan University (SKKU), Suwon, Korea
- 2024
- Token-adaptive basis selection at inference time [C5] [P2]
 - Mixture-of-Experts (MoE)-based machine unlearning & efficient router training for upcycling [C4]
 - Dimension pruning for compact HDC-IMC implementations [J1] [A4]
- Advised by Prof. Jong Hwan Ko & Dr. Kang Eun Jeon
- 2024 | **B.S. in Mathematics and Electronic & Electrical Engineering (Double Major)**
Sungkyunkwan University (SKKU), Suwon, Korea
- 2018
- IMC array-optimized HDC structure with full array utilization [C2] [P1]
 - BatchNorm optimization for Once-for-All Networks with reduced training time [A2]
 - Autonomous driving & parking via multi-sensor fusion (camera, LiDAR) [C1] [A1]
- 2022 | **KATUSA (Korean Augmentation To the United States Army)**
Pyeongtaek, Korea
- 2020
- Provided interpretation and translation support between U.S. and ROK Army

PUBLICATIONS

¹: Equal contribution, *: Corresponding author

- C6 S. H. Yeon, **D. Y. Kang**, and J. H. Ko*, "HiDER: Test-Time Scaling with Diffusion Language Models via Hidden-State Deferral Routing," *AAAI Conference on Artificial Intelligence (AAAI)*, 2027. [under review]
- C5 **D. Y. Kang**, S. H. Han, J. G. Choo, K. E. Jeon*, and J. H. Ko*, "Dynamic SVD via Token-Adaptive Basis Selection," *Neural Information Processing Systems (NeurIPS)*, 2026. [under review]
- C4 K. E. Jeon, Y. S. Kang, **D. Y. Kang**, T. Y. Lee, G. M. Park*, and J. H. Ko*, "R-ESC: Robustly Erasing Space Concepts via Stochastic Feature Remapping," *European Conference on Computer Vision (ECCV)*, 2026. [Paper]
- C3 Y. H. Oh, **D. Y. Kang**, J. Park, C. Hwang, K. E. Jeon*, and J. H. Ko*, "HyperSPACE: Sparse-Adder-Compatible Encoding for Efficient Hyperdimensional Computing on Digital CIM Arrays," *IEEE/ACM International Symposium on Low Power Electronics and Design (ISLPED)*, 2026. [Paper]
- C2 **D. Y. Kang**, Y. H. Oh, C. Hwang, J. Kim, K. E. Jeon*, and J. H. Ko*, "MEMHD: Memory-Efficient Multi-Centroid Hyperdimensional Computing for Fully-Utilized In-Memory Computing Architectures," *Design, Automation and Test in Europe Conference (DATE)*, 2025. [Paper]
- C1 E. J. Hwang, **D. Y. Kang**, J. H. Moon, H. Y. Seong, S. W. Lee, and J. W. Jeon*, "Implementation of Autonomous Parking System Using LiDAR-based Triangulation Method," *Korea Information Processing Society*, 2023. [Paper]
- J1 **D. Y. Kang**¹, Y. H. Oh¹, C. Hwang, J. Kim, K. E. Jeon*, and J. H. Ko*, "Multi-Centroid Hyperdimensional Computing for Compact IMC Arrays via Dimension Pruning," *IEEE Internet of Things Journal*, 2026. [Paper]

HONORS & AWARDS

- A6 **On-Device AI Optimization Challenge – Nota AI (2026)**
Awarded 2nd place (out of 24 teams) at NetsPresso On-Device LLM Runtime Optimization track [Post]
- A5 **Samsung Outstanding Poster Award – Samsung Electronics (2025)**
Top voted project for Samsung Electronics Industry-Academia Collaboration Exchange
- A4 **DAC Young Fellows – Design Automation Conference (2025)**
Selected for emerging researchers in Electronic Design Automation (EDA) field
- A3 **BK21 Scholarship – BrainKorea21 (2024-2025)**
Granted \$10k per year for outstanding graduate students in Department of Electrical and Computer Engineering
- A2 **Cross-disciplinary Research Award – Sungkyunkwan University (2024)**
Awarded 2nd place (out of 16 teams) for cross-disciplinary research with students from diverse majors.
- A1 **SKKU Autonomous Driving SW Competition – Hyundai Mobis & Sungkyunkwan University (2023)**
Awarded 3rd place (out of 25 teams) in autonomous driving and parking challenges hosted by Hyundai Mobis.

PATENTS

- P2 **D. Y. Kang, S. H. Han, J. H. Ko and Samsung Electronics, KR Patent Application (10-2026-0072988), SVD-based Compression of Large Language Models via Token-Adaptive Dynamic Basis Selection, Jul. 2026.**
- P1 **D. Y. Kang, Y. H. Oh, C. Hwang, K. E. Jeon, J. H. Ko and H. H. Lee, KR Patent Application (10-2024-0174593), Memory-efficient hyperdimensional computing techniques for in-memory computing optimization, Nov. 2024.**

TEACHING EXPERIENCE

- 2026, **On-device AI (teaching assistant)**
Sungkyunkwan University (SKKU), Suwon, Korea
- Delivered lectures to 100+ undergraduate and graduate students in the Next-Generation Vehicle Bootcamp
 - Conducted hands-on sessions on GPTQ and SparseGPT [Lab1] [Lab2]
- 2026 **Data Structures and Algorithms (teaching assistant)**
Sungkyunkwan University (SKKU), Suwon, Korea
- Served as a teaching assistant (TA) for an undergraduate course with 50+ students

SKILLS

- Programming Languages:** Python, C, C++, MATLAB
- Tools:** PyTorch, CUDA Programming, Triton, Huggingface, Numpy, TorchHD

REFERENCES

Saibal Mukhopadhyay (*Ph.D. advisor*)

Professor, School of Electrical and Computer Engineering
Georgia Institute of Technology, Atlanta, GA, USA

✉ saibal.mukhopadhyay@ece.gatech.edu

🌐 <https://greenlab.ece.gatech.edu/>

Jong Hwan Ko (*M.S. advisor*)

Associate Professor, Department of Electrical and Computer Engineering
Sungkyunkwan University, Suwon, Korea

✉ jhko@skku.edu

🌐 <https://iris.skku.edu/>

Kang Eun Jeon

Assistant Professor, Department of Electrical and Computer Engineering
Daegu Gyeongbuk Institute of Science and Technology (DGIST), Daegu, Korea

✉ kejeon@dgist.ac.kr

🌐 <https://jedislab.org>