

# Kanghyun Choi

Accelerated Intelligent Systems (AISys) Lab.  
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## RESEARCH INTERESTS

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*Model Quantization for Training and Inference, Data-free Neural Network Compression, Generative Models*

## EDUCATION

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- **Seoul National University** Seoul, Korea  
*Ph.D. Student, Electrical and Computer Engineering, GPA 4.15/4.3* *September 2023 - Present*
- **Yonsei University** Seoul, Korea  
*M.S. in Computer Science, GPA 4.20/4.3* *September 2020 - August 2023*
- **Yonsei University** Seoul, Korea  
*B.S. in Computer Science, GPA 3.81/4.3* *March 2016 - August 2020*
- **American University** Washington D.C., USA  
*Study Abroad Program, Computer Science* *January 2019 - May 2019*

## PUBLICATIONS

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- **Kanghyun Choi**, Hyeyoon Lee, Dain Kwon, SunJong Park, Kyuyeun Kim, Noseong Park, Jonghyun Choi, and Jinho Lee, “MimiQ: Low-Bit Data-Free Quantization of Vision Transformers with Encouraging Inter-Head Attention Similarity”, AAAI 2025
- Hyeyoon Lee, **Kanghyun Choi**, Dain Kwon, SunJong Park, Mayoore Selvarasa Jaiswal, Noseong Park, Jonghyun Choi, and Jinho Lee, “DataFreeShield: Defending Adversarial Attacks without Training Data”, ICML 2024
- Jaewon Jung, Jaeyong Song, Hongsun Jang, Hyeyoon Lee, **Kanghyun Choi**, Noseong Park, Jinho Lee, “Fast Adversarial Training with Dynamic Batch-level Attack Control”, DAC 2023
- **Kanghyun Choi**, Hyeyoon Lee, Deokki Hong, Joonsang Yu, Noseong Park, Youngsok Kim, Jinho Lee, “It’s All In the Teacher: Zero-Shot Quantization Brought Closer to the Teacher”, CVPR 2022, **Oral presentation**
- Deokki Hong, **Kanghyun Choi**, Hyeyoon Lee, Joonsang Yu, Noseong Park, Youngsok Kim, Jinho Lee, “Enabling Hard Constraints in Differentiable Neural Network and Accelerator Co-Exploration”, DAC 2022
- **Kanghyun Choi**, Deokki Hong, Noseong Park, Youngsok Kim, Jinho Lee, “Qimera: Data-free Quantization with Synthetic Boundary Supporting Samples”, NeurIPS 2021
- **Kanghyun Choi**<sup>1</sup>, Deokki Hong<sup>1</sup>, Hojae Yoon<sup>1</sup>, Joonsang Yu, Youngsok Kim, Jinho Lee, “DANCE: Differentiable Accelerator/Network Co-Exploration”, DAC 2021

## PROJECTS

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- **Large Language Model Training with FP8 Arithmetic** *2024-2025*  
*Model Optimization Program, Google Korea, Unrestricted Gift*
- **Data-Free Quantization Framework for Vision Transformers** *2023-2024*  
*Model Optimization Program, Google Korea, Unrestricted Gift*
- **Accelerating Diffusion Models for Landscape Generation** *2023-2024*  
*Electronics and Telecommunications Research Institute (ETRI)*
- **Semantic Modification Method for High-resolution Face Images** *2022*  
*Electronics and Telecommunications Research Institute (ETRI)*
- **High-resolution Face Image Generation by Transformer-based GAN** *2021*  
*Electronics and Telecommunications Research Institute (ETRI)*
- **Fast Distributed Deep Neural Network Training** *2020*  
*Korea Institute of Industrial Technology (KITECH)*

## AWARDS

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- **The 28th Samsung Humantech Paper Award:** February 2022  
*Silver Prize, Computer Science and Engineering*
- **High Honors at Graduation (Top 3% of class):** August 2020

## TEACHING EXPERIENCE

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- **Programming Methodology (430.211):** Teaching Assistant, Spring 2024
- **Digital System Design and Practice (430.315A):** Teaching Assistant, Fall 2023
- **Multi-core and GPU Programming (CSI4119):** Teaching Assistant, Spring 2021, 2022
- **Logic Circuit Design (CSI2111):** Teaching Assistant, Fall 2020

## ACADEMIC SERVICES

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- **Reviewer:** ICML, CVPR, ICCV, ECCV, ACCV, AAAI, IEEE SPL

## SKILLS

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- **Python, C, C++,  $\LaTeX$**
- **Pytorch, Tensorflow, Pandas, SciPy**
- **Korean** (Native), **English** (Fluent), **Japanese** (Intermediate)