

EDUCATION

Korea Advanced Institute of Science and Technology (KAIST)

Ph.D. in Electrical and Electronic Engineering

– Advisor: Prof. Changhun Oh

Daejeon, Korea

September 2024 –

Konkuk University

B.S. in Computer Science and Engineering, GPA: 4.4/4.5

– Thesis: “LRS-GB: Learning Rate Schedule for Fine-Tuning with Generalization Bound Guarantee”

– Advisor: Prof. Hyang-Won Lee

– Graduated as top-ranked student

Seoul, Korea

March 2021 –August 2024

RESEARCH INTERESTS

- *Theoretical (quantum) computer science*
- Quantum Computing and Quantum Information Theory
- Quantum Cryptography
- Complexity Theory

EXPERIENCE

Research Assistant, KAIST

Quantum Information Theory Lab (QIT), Dept of Physics.

Daejeon, Korea

February 2025 –

Undergraduate Research Assistant, Konkuk Univ.

Connected Intelligence Lab (CoIn), Dept of Computer Science and Engineering.

Seoul, Korea

August 2022 –May 2024

– Develop algorithm for partitioning and offloading the computation tasks of deep neural networks

– Studying Lyapunov Optimization, Deep Learning and Reinforcement Learning

PUBLICATIONS

- [1] Sangwoo Jeon, **Vaughn Sohn**, Changhun Oh, “Optimal copy complexity of quantum state cloning”, *arXiv preprint*, 2026.
- [2] **Vaughn Sohn**, Changhun Oh, “When to Skip Syndrome Extraction in Surface-GKP Codes”, *arXiv preprint*, 2026.
- [3] **Vaughn Sohn**, Suhwan Kim, Hyang-Won Lee, “Joint Frame Drop and Object Detection Task Offloading for Mobile Devices via RL with Lyapunov Optimization”, *IEEE Transactions of Mobile Computing*, 2025.

PROJECTS

- LRS-GB: Learning Rate Schedule for Fine-Tuning with Generalization Bound Guarantees August 2023 –June 2024
 - Propose a new fine-tuning algorithm that enhance the generalization performance.
 - *Team Lead*
- RAID: Reinforcement Assisted Image Defense against Adversarial Attacks August 2023 –December 2023

- Design an adversarial defense method via Deep RL.
- *Team Lead*

TEACHING

- **Teaching Assistant** at Konkuk Univ. 2022 –2023
 - *Discrete Mathematics* Fall 2023
 - *Probability and Statistics* Spring 2023
 - *Linear Algebra* Fall 2022
 - *C Programming* Spring 2022

SKILLS

- **Programming Languages:** Python(Pytorch), C++/C, Java
- **ML/DL baselines:** CV(YOLO), DRL(DQN, PPO), Adversarial Attack(PGD, OPA)
- **IoT Devices:** RaspberryPI, Jetson Nano
- **Etc:** OMNeT++, MATLAB

SCHOLARSHIPS AND AWARDS

- Scholarship for Academic Excellence, Konkuk University 2021 –2024
 - *2023, 2nd semester*
 - *2022, 2nd semester*
 - *2021, 1st and 2nd semester*
- Dean's List, Konkuk University 2021 –2024
 - *2023, 2nd semester*
 - *2022, 1st and 2nd semester*
 - *2021, 1st and 2nd semester*
- Scholarship for Woon Hae Foundation 2022
- Undergraduate Paper Award, Korean Institute of Communications and Information Sciences August 2023
- Undergraduate Paper Award, Korean Institute of Communications and Information Sciences February 2023