




Jaewon Kim

Undergraduate Student at Korea University, Seoul, Korea

 Semiconductor Engineering @ Korea University

 jwko302@korea.ac.kr

 linkedin.com/in/jaewon-kim

 github.com/eric98040

 jaewon.work

Research Interest

I am passionate about generative models and reinforcement learning, with a focus on their mathematical foundations and applications in optimization problems. My interests extend to controlled generation techniques and novel approaches for inverse problems.

- Generative Models (Diffusion, GANs) with focus on controlled generation
- Reinforcement Learning (Model-based approaches, Sample efficiency)
- Neural Rendering and 3D Reconstruction
- Advanced Optimization Techniques
- Deep Learning Mathematics and Foundations

Education

Mar.2022 – Present | **B.S. in Semiconductor Engineering**
Korea University, Seoul, Korea

- GPA: 4.38/4.5
- Complex Data Analytics LAB

Research Experience

Mar.2024 – Present | **Complex Data Analytics LAB (CDAL)**
Undergraduate Researcher

- Advisor: Prof. Seok Junhee
- Working on Simulator acceleration and inverse design of semiconductor devices
- Research on Probabilistic Generative Models (GAN, Diffusion, etc.)

Honors & Awards

Jul. 2022 | **Dean's List (2022-1)**
Award given to an undergraduate student with a perfect GPA (4.5/4.5) for a semester

2022 – present | **Semester High Honors (2022-2, 2023-1, 2023-2, 2024-1)**
Award given to undergraduate students achieving a GPA of 4.0 or higher for a semester

2022 – present | **KU Alumni Scholarship**
Merit-based scholarship awarded through SK Hynix-sponsored alumni program at KU

Oct. 2024 | **Outstanding Poster Award**
12th SK Hynix Academic Conference

Projects

- Sep. 2024 – Dec. 2024 **DiffOptics: Diffusion-Based Optical Design Generation with Wavelength and Power Control**
Complex Data Analytics Lab (CDAL), Korea University
- Jul. 2024 – Oct. 2024 **FSI AIxData: Dual-Pipeline Approach to Financial Fraud Detection: Balancing Classification Performance and Data Privacy**
Financial Security Institute (FSI)
- Mar. 2024 – Jun. 2024 **OpticalGAN: Power-Wavelength Conditional Generation of Photonic Devices**
Complex Data Analytics Lab (CDAL), Korea University
- Apr. 2024 – Jun. 2024 **CartoonGAN+: Architectural Modifications for Stable Anime Style Transfer**
BITAmin 12th Project
- Jan. 2024 – Mar. 2024 **INSIDE OUT: Multi-label Emotion Classification and Instance Segmentation for Animated Characters**
BITAmin 12th Project
- Sep. 2023 – Dec. 2023 **Optimal Motion Blur Preprocessing for High-Speed Object Detection**
SEMI204, Korea University

Activities

- Mar.2024 – Present **Young Engineers' Honor Society (YEHS)**
Organization under The National Academy of Engineering of Korea (NAEK)
- Aug.2023 – Aug.2024 **BITAmin (Intercollegiate Big Data Academic Society)**
Intercollegiate offline study group focusing on ML/DL research and projects
- Mar.2023 – Dec.2023 **Korea University International Student Assistant (KUISA)**
Voluntary student organization under Global Services Center

Languages

Korean: Native

English: Proficient