




Jaewon Kim


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 Semiconductor Engineering @ Korea University

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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 <i>Korea University, Seoul, Korea</i> <ul style="list-style-type: none">• GPA: 4.36/4.5• <u>Complex Data Analytics LAB</u>
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Research Experience

Mar.2024 – Present	Complex Data Analytics LAB (CDAL) <i>Undergraduate Researcher</i> <ul style="list-style-type: none">• Advisor: <u>Prof. Seok Junhee</u>• Working on Simulator acceleration and inverse design of semiconductor devices• Research on Probabilistic Generative Models (GAN, Diffusion, etc.)
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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, 2024-2) 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 <i>12th SK Hynix Academic Conference</i>

Projects

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

Activities

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

Languages

Korean: Native
English: Proficient