Jaewon Kim

Undergraduate Student at Korea University, Seoul, Korea

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Research Interest

I am passionate about generative models, especially exploring their applications in 3D space. My interests extend to mathematical aspects of these models, optimization techniques, and the potential of graph neural networks in this field.

- Generative Models (Diffusion, GANs, etc.)
- 3D reconstruction and change detection
- Neural Rendering
- Physics Simulation
- Graph Neural Networks (GNN)

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