Seonuk Kim

Undergraduate Researcher in Human-AI Interaction · Comic Artist
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Research Interests

My research focuses on human-centered AI for comics and webtoon creation, particularly creativity support tools (CSTs) that reduce repetitive work while preserving creators' intent, visual style, and creative control. I bring over two years of building and shipping generative image systems in industry, and an active practice as a webtoon artist.

Education

2020–2028 **Ulsan National Institute of Science and Technology (UNIST)** Ulsan, Korea
B.S. in Industrial Engineering and Design (*double major*), expected Feb 2028
GPA 3.86/4.3 (95.6/100) · Presidential Science Scholar · Talent Award of Korea
Leave of absence for mandatory military service in industry, Sep 2023 – Aug 2025

Publications

* equal contribution

International Conference Papers

[C2] EMNLP '25 Taebaek Hwang*, Minseo Kim*, Gisang Lee, **Seonuk Kim**, Hyunjun Eun.
KRETA: A Benchmark for Korean Reading and Reasoning in Text-Rich VQA Attuned to Diverse Visual Contexts. *Proceedings of the 2025 Conference on Empirical Methods in Natural Language Processing* (EMNLP 2025, Main Conference).

[C1] IASDR '23 **Seonuk Kim**, Taeyoung Ko, Yousang Kwon, Kyungho Lee.
Designing Interfaces for Text-to-Image Prompt Engineering Using Stable Diffusion Models: A Human-AI Interaction Approach. *Proceedings of the 10th Congress of the International Association of Societies of Design Research* (IASDR 2023).

Posters

[P1] UIST '23 Adjunct Yousang Kwon, **Seonuk Kim**, Taeyoung Ko, Juhyeok Yoon, Kyungho Lee.
Representing the Timbre of Traditional Musical Instruments Based on Contemporary Instrumental Samples Using DDSP. *Adjunct Proceedings of the ACM Symposium on User Interface Software and Technology* (UIST 2023), poster.

Domestic Conference Papers (in Korean)

[D3] HCIK '24 Yousang Kwon, Jonghoon Byun, **Seonuk Kim**, Taeyoung Ko, Juhyeok Yoon, Kyungho Lee.
Representing the Timbre of Traditional Musical Instruments Based on Contemporary Instrumental Samples Using DDSP. *Proceedings of HCI Korea* (HCIK 2024).

[D2] HCIK '23 **Seonuk Kim**, Yousang Kwon, Kyungho Lee.
#taggenerator: How an Online Community Designs an Interface for Text Prompt Inputs Using NovelAI's Diffusion Model. *Proceedings of HCI Korea* (HCIK 2023), pp. 642–647.

[D1] KSDS '22 **Seonuk Kim**, Kyungho Lee.
A Study on the Use of AI as Creative Support Tool for Line Drawing in Manga Production. *Korea Society of Design Science* (KSDS 2022). Best Student Paper Honorable Mention.

Research Experience

2026–Present **Human-Data Interaction Lab (HDIL)**, Yonsei University — Seoul, Korea
Undergraduate Researcher, iDea Team · Advisor: Prof. Dae Hyun Kim
Human-AI interaction and visualization research for multimodal data communication.

2026–Present **Epictive Lab**, Center for Digital Humanities, UNIST — Ulsan, Korea
Undergraduate Research Assistant · Advisor: Prof. Jae-Yon Lee
Digital humanities research on Korean literature through computational literary analysis.

2024–2025 **AttentionX**, AI research group and startup accelerator
VLM Researcher (Cohort 4)
Co-developed KRETA, a Korean text-rich VQA benchmark for vision-language models [C2].

2021–2024 **Expressive Computing Lab (EXPC)**, UNIST — Ulsan, Korea
Undergraduate Researcher · Advisor: Prof. Kyungho Lee

- Analyzed forum data from an online text-to-image community to learn how users design prompt interfaces, and proposed new prompt-engineering interfaces [C1, D2].
- Built xDiffusers, a tangible interface that poses ControlNet-guided Stable Diffusion with a ball-jointed doll, funded by the UNIST AI Challenge Program.
- Co-developed DDSP timbre modeling [P1, D3] and AI support for line drawing [D1].

2020–2021 **Service Engineering and Knowledge Discovery Lab**, UNIST — Ulsan, Korea
Undergraduate Research Collaborator · Advisor: Prof. Chiehyeon Lim

- Built a 9-axis IMU sensing device and collected cat-movement data to predict arthritis, funded by a UNIST AI Graduate School Creative Independent Project grant.

Industry Experience

2025 **LionRocket**, generative-AI startup for webtoon creation — Seoul, Korea
MLOps Engineer (alternative military service)

- Built an image-to-video pipeline (Wan 2.1, VLM-written prompts) for webtoon stills.
- Trained a GAN super-resolution model that adjusts the thickness of comic line art.
- Deployed speech-balloon removal (YOLO, inpainting) and character segmentation.

2023–2024 **thingsflow**, AI content startup, a KRAFTON subsidiary — Seoul, Korea
Machine Learning Scientist, 2023–2024 (alternative military service)
Machine Learning Scientist Intern, 2023

- Developed and launched the Hellobot Pet AI Profile Generator with SDXL, LoRA, and depth ControlNet, contributing $150K in revenue and 25K sales in four months.
- As an intern, built a web-novel cover generator and a trailer-to-webtoon adaptation.

Honors and Awards

Scholarships and National Honors

2026–2027 Forest of Talent Fellowship, Korea Foundation for Advanced Studies, $6,000
2023–2027 Presidential Science Scholarship, one of 60 enrolled undergraduates nationwide
2024 Talent Award of Korea, one of 50 university students and young adults nationwide
2020–2023 Academic Performance Scholarship, UNIST, full tuition and monthly stipend

Awards and Grants

2022–2026 KAIST–POSTECH–UNIST AI & Data Science Competition: 1st in 2026, top 4 every year
2025 Student Merit Award, UNIST 18th Anniversary Ceremony (one of 15 students)
2023 UNIST AI Challenge Program research grant, $3,000
2022 Best Student Paper Honorable Mention, Korea Society of Design Science [D1]
2020 UNIST AI Graduate School research grant, $3,800
2020 Samsung Electronics Vice-Chairman Prize, Campus Patent Universiade

Talks and Conferences

Talks

2026 "ComfyUI: Technical Introduction and Implementation Guide"
Tightsaju · technical talk

2026 "Lesson 5: The Shortest Path Is the Long Way Around"
Young Engineers Honor Society, National Academy of Engineering of Korea · mentoring talk

2025 "After JENESYS: From Network to Chance, From Chance to Career"
Consulate-General of Japan in Busan · mentoring talk

Conferences

2023 *IASDR 2023*, Milan, Italy · paper presentation [C1]
2023 *HCI Korea 2023* · paper presentation [D2]
2022 *SIGGRAPH Asia 2022*, Daegu, Korea · attended
2022 *KSDS 2022 Spring Conference*, online · paper presentation [D1]

Teaching

2026 Teaching Assistant, ITP117 Introduction to AI Programming II, UNIST
2023 Teaching Assistant, ITP107 Introduction to AI Programming I, UNIST

Leadership and Activities

2024–Present Member, Young Engineers Honor Society, National Academy of Engineering of Korea
UNIST representative for 2025–2026

2020–Present President, HeXA, UNIST programming and information security club
Executive board 2021–2024, president 2022–2023; hosted NEXUS 2023 (70 participants)

2021–2023 Co-President, brAIns, student AI research club at the UNIST AI Graduate School
Member from 2021, co-president 2022–2023; paper reviews and model implementations

Creative Practice

2025–Present *Academic Leave Letter from Science High School*, autobiographical webtoon series
Serialized on Naver Webtoon Best Challenge after first appearing on Instagram

2024 *LUCiD*, AI-generated animation trailer
Images with Stable Diffusion XL, video with Luma Dream Machine, and music with Suno

Skills

Technical Python, PyTorch, Diffusers, ComfyUI, LoRA, ControlNet, YOLO, FastAPI, Blender add-ons
Design Clip Studio Paint, Photoshop, Illustrator, InDesign, Premiere Pro
Languages Korean (native), English, Japanese (JLPT N3)