

# HYUNG-KWON KO

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## About

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Hyung-Kwon Ko is a researcher at KAIST Interaction Lab. His main research areas include Human-Computer Interaction, Human-Centered AI, and Information Visualization. He designs, prototypes, and evaluates interactive systems to innovate people's working paradigms based on a thorough investigation of their need. Experienced in AI models from both academia and industry, he is currently interested in how foundation models (e.g., DALL-E) could help people in visual art domains perform creative works.

## Education

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2019 – 2021                    **Seoul National University**, Seoul, Korea  
Master of Science in Computer Science and Engineering (Advisor: Dr. Jinwook Seo)

2014 – 2019                    **Hanyang University**, Seoul, Korea  
Bachelor of Science in Mathematics, Minor in Industrial Engineering

## Publications

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### CONFERENCE & JOURNAL PAPERS

- [a5]        Ko, H.-K.\*, An, S.\*, Park, G., Kim, S.K., Kim, D., Kim, B., Seo, J. (2022).  
**We-toon: A Communication Support System between Writers and Artists in Collaborative Webtoon Sketch Revision.**  
*Proceedings of the ACM Symposium on User Interface Software and Technology (UIST '22)*, 14 pages.
- [a4]        Jeon, H.\*, Ko, H.-K.\*, Lee, S., Jo, J., Seo, J. (2022).  
**Uniform Manifold Approximation with Two-phase Optimization.**  
*Proceedings of IEEE Conference on Visualization and Visual Analytics (VIS '22)*, 5 pages.
- [a3]        Jeon, H., Ko, H.-K., Jo, J., Kim, Y., Seo, J. (2021).  
**Measuring and Explaining the Inter-Cluster Reliability of Multidimensional Projections.**  
*IEEE Transactions on Visualization and Computer Graphics (In Proceedings of VIS '21)*, 28(1):551-561.
- [a2]        Jung, S., Choe, K., Park, S., Ko, H.-K., Seo, J. (2021).  
**Mixed-Initiative Approach to Extract Data from Pictures of Medical Invoice.**  
*IEEE Pacific Visualization Symposium (PacificVis '21)*, 111-115.
- [a1]        Ko, H.-K., Jo, J., Seo, J. (2020).  
**Progressive Uniform Manifold Approximation and Projection.**  
*EG/VGTC Conference on Visualization (EuroVis '20)*, 133-137.

### PREPRINTS & PUBLICATIONS IN PROGRESS

- [b6]        Ko, H.-K., Son, K., Jin, H., Kim, J. (2022).  
**Crowdiffusion: Text Prompting of Large-scale Text-to-Image Generation Models by Example.**  
*(In Progress)*
- [b5]        Shin, H., Lee, Y., Ko, H.-K., Kim, J. (2022).  
**Enabling Prototyping of AI-infused UIs with Task-level Specifications.**  
*(In Progress)*
- [b4]        Yun, S., Jeon, H., Ko, H.-K., Seo, J. (2022).  
**Scalable Readability Evaluation of Graph Layouts on Distributed Environments.**  
*(Under Review)*

- [b3] Ko, H.-K., Park, G., Jeon, H., Jo, J., Kim, J., Seo, J. (2022).  
**Large-scale Text-to-Image Generation Models for Visual Artists' Creative Works.**  
*Arxiv Preprint (Under Review)*
- [b2] Choi, J.\*, Song, J.\*, Jeon, H., Kim, Y., Ko, H.-K., Seo, J. (2022).  
**How Disentanglement Affects Users' Interpretation, Control, and Sentiment when Using Generative Models.**  
*(Under Review)*
- [b1] Jeon, H., Aupetit, M., Lee, S., Ko, H.-K., Kim, Y., Seo, J. (2022).  
**Distortion-Aware Brushing for Interactive Cluster Analysis in Multidimensional Projections.**  
*Arxiv Preprint (Under Review)*

\* denotes equal contributions.

## Experience

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- 06/2022 – Present    **KAIST Interaction Lab (KIXLAB)**, Daejeon, Korea  
*Researcher (Advisor: Dr. Juho Kim)*
- 10/2021 – 06/2022    **Naver Webtoon Corp.**, Seongnam, Korea  
*AI Research Scientist, Webtoon AI*
- 04/2021 – 10/2021    **Naver Webtoon Corp.**, Seongnam, Korea  
*AI Research Intern, Webtoon AI, (Mentor: Dr. Daesik Kim)*
- 03/2019 – 08/2019    **Human-Computer Interaction Lab**, Seoul, Korea  
*Research Intern (Advisor: Dr. Jinwook Seo)*
- 01/2019 – 02/2019    **LG Electronics Inc.**, Seoul, Korea  
*Research Intern, CTO Division*
- 06/2018 – 08/2018    **Wesleyquest Inc.**, Seoul, Korea  
*Research Associate*

## Honors and Awards

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- 2022                    Gary Marsden Travel Award (Full travel support for UIST '22: \$2,800 USD), *ACM SIGCHI*
- 2018                    Big Data Contest (3<sup>rd</sup> Place, Prize Money: \$900 USD), *NIA and Korea Big Data Forum*
- 2018                    AI Novel Writing Competition (2<sup>nd</sup> Place, Prize Money: \$18,000 USD), *KT Corporation and KOCCA*
- 2017                    Academic Research Competition (2<sup>nd</sup> Place, Prize Money: \$180 USD), *Hanyang University*
- 2014 – 2018            Merit-based Scholarship (6 semesters), *Hanyang University*

## Academic Services

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- PAPER                    ACM CHI ('22)
- REVIEWING            IEEE PacificVis ('20, '21)
- STUDENT                ACM UIST ('22)
- VOLUNTEERING

## Press Coverage

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Nov 2022 [The Road to Becoming a Published Researcher, IEEE Computer Society](#)  
Aug 2018 [Writing Novels on Its Own... AI Contests Human Creativity, KBS \(Korean\)](#)