

# HYUNG-KWON KO

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## About

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Hyung-Kwon Ko is a researcher at KAIST Interaction Lab, focusing on Human-Computer Interaction, Human-Centered AI, and Information Visualization. He develops intelligent systems to address complex communication challenges between humans or when interacting with computers, by proposing novel user interfaces or sophisticated algorithms. Based on expertise in HCI and AI from both academia and industry, he aspires to pioneer pragmatic solutions and drive innovation in our society.

## 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

- [a7]      Jeon, H., Cho, A., Jang, J., Lee, S., Hyun, J., Ko, H.-K., Jo, J., Seo, J. (2023).  
**Zadu: A python library for evaluating the reliability of dimensionality reduction embeddings.**  
*IEEE Visualization Conference (VIS '23)*, 1-5.
- [a6]      Ko, H.-K., Park, G., Jeon, H., Jo, J., Kim, J., Seo, J. (2023).  
**Large-scale Text-to-Image Generation Models for Visual Artists' Creative Works.**  
*International Conference on Intelligent User Interfaces (IUI '23)*, 1-15.
- [a5]      Ko, H.-K.\*, An, S.\*, Park, G., Kim, S.K., Kim, D., Kim, B., Jo, J., Seo, J. (2022).  
**We-toon: A Communication Support System between Writers and Artists in Collaborative Webtoon Sketch Revision.**  
*ACM Symposium on User Interface Software and Technology (UIST '22)*, 1-14.
- [a4]      Jeon, H.\*, Ko, H.-K.\*, Lee, S., Jo, J., Seo, J. (2022).  
**Uniform Manifold Approximation with Two-phase Optimization.**  
*IEEE Visualization Conference (VIS '22)*, 80-84.
- [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.

### WORKSHOP PAPERS

- [b2] Ko, H.-K., Jeon, H., Park, G., Kim, D. H., Kim, N. W., Kim, J., Seo, J. (2023).  
**A Vega-Lite Dataset and Natural Language Generation Pipeline with Large Language Models.**  
*VIS 2023 NLVIZ Workshop: Exploring Research Opportunities for NL, Text, and Data Visualization*
- [b1] Ko, H.-K., Son, K., Jin, H., Choi, Y., Chen, X. (2023).  
**Moderating Customer Inquiries and Responses to Alleviate Stress and Reduce Emotional Dissonance of Customer Service Representatives.**  
*CHI 2023 Workshop on Generative AI and HCI*

#### PREPRINTS & PUBLICATIONS IN PROGRESS

- [c2] Ko, H.-K., Jeon, H., Park, G., Kim, D. H., Kim, N. W., Kim, J., Seo, J. (2023).  
**Natural Language Dataset Generation Framework for Visualizations Powered by Large Language Models.**  
*Arxiv Preprint (Under Review)*
- [c1] 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*

\* 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 – 09/2021     **Naver Webtoon Corp.**, Seongnam, Korea  
*AI Research Intern, Webtoon AI*
- 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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|-------------|---|
| 2023        | Fulbright Scholarship Nominee, (Ph.D. program, \$90,000 USD), <i>US &amp; ROK Government</i>        |
| 2023        | ACM Travel Grants (Travel support for IUI '23, \$980 USD), <i>ACM SIGCHI</i>                        |
| 2022        | Gary Marsden Travel Awards (Travel support for UIST '22, \$2,800 USD), <i>ACM SIGCHI</i>            |
| 2018        | Big Data Contest (3 <sup>rd</sup> Place, \$900 USD), <i>NIA and Korea Big Data Forum</i>            |
| 2018        | AI Novel Writing Competition (2 <sup>nd</sup> Place, \$18,000 USD), <i>KT Corporation and KOCCA</i> |
| 2014 – 2018 | Merit-based Scholarship (6 semesters), <i>Hanyang University</i>                                    |
| 2017        | Academic Research Competition (2 <sup>nd</sup> Place, \$180 USD), <i>Hanyang University</i>         |

## Invited Talks and Seminars

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1. *Large-scale Text-to-Image Generation Models for Visual Artists' Creative Works*  
Shandong University, Qingdao, China. January 2023.

## Academic Services

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PAPER	ACM CHI ('24, '23), CHI LBW ('23), C&C ('23)
REVIEWING	IEEE PacificVis ('20, '21)
STUDENT	ACM UIST ('22), IUI ('23)
VOLUNTEERING	

## Press Coverage

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Nov 2022	<a href="#">The Road to Becoming a Published Researcher</a> , <i>IEEE Computer Society</i>
Aug 2018	<a href="#">Writing Novels on Its Own... AI Contests Human Creativity</a> , <i>KBS (Korean)</i>