Taewan Kim

PhD candidate at KAIST • HCI Researcher

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As a researcher in **Human-Computer Interaction (HCI)** with a design background, my focus is on **Human-Centered AI Interaction design**. My approach revolves around understanding people's needs deeply, with a special emphasis on creating AI systems that foster mental well-being. The work I have contributed has been presented at renowned HCI conferences such as ACM **CHI**, **CSCW**, and **DIS**.

By combining my strengths in **Mixed-method Research** and **Human-centered Design**, I develop artifacts, methodologies, and frameworks that inspire meaningful and positive algorithmic experiences for both HCI researchers and practitioners.

Keywords: HCI, HAI, User Experience Research, Human-centered Design, Human-AI interaction, Mental Well-being, Mental health, VR/AR, Autism, Social Computing

WORK EXPERIENCE

PhD Research Intern at NAVER AI Lab Jan 2023 – Jul 2023

Bundang, Korea | Mentor: Dr. Young-Ho Kim

Led an HCI research project on the Harnessing Large Language Model(LLM) in Real-world Clinical Settings.

- Developed an interactive mental health care system using React.js, FastAPI, and Firebase, aimed at supporting psychiatric patients' daily reflection.
- Conducted a field deployment study to evaluate the system's effectiveness and potential impact on mental health improvement in clinical mental health care settings (Wonkwang University Hospital).
- Authored a research paper as the first author for a top-tier HCI conference (currently in revision).

EDUCATION

KAIST Sep 2021 – Feb 2024

Ph.D., Candidate — Industrial Design, *specializing in Human-Computer Interaction*
Advisor: Prof. Hwajung Hong

Seoul National University Sep 2018 – Aug 2021

Ph.D. Candidate — Cognitive Science, *specializing in Human-Computer Interaction*
Advisor: Prof. Hwajung Hong (Transferred to KAIST due to adviser's move)

Ulsan National Institute of Science and Technology Mar 2016 – Feb 2018

M.E. — Creative Design Engineering
Advisor: Prof. Hwajung Hong
Dissertation: Helping Friends Suffering Mental Health Issues: Challenges and Opportunities for Social Support on Social Media from the Peer's Point of View

Handong University Mar 2011 – Feb 2016

B.S. — Product Design

CONFERENCE PUBLICATIONS

MindfulDiary: Harnessing Large Language Model to Support Psychiatric Patients' Journaling
Taewan Kim, Seolyeong Bae, Hyun AH Kim, Su-woo Lee, Hwajung Hong, Chanmo Yang, Young-Ho Kim
ACM CHI 2024 (to appear) - PDF (preprint)

DiaryMate: Understanding User Perceptions and Experience in Human-AI Collaboration for Personal Journaling
Taewan Kim, Donghoon Shin, Young-Ho Kim, Hwajung Hong
ACM CHI 2024 (to appear)

Prediction for Retrospection: Integrating Algorithmic Stress Prediction into Personal Informatics Systems for College Students' Mental Health
Taewan Kim, Haesoo Kim, Hayeon Lee, Hwarang Goh, Shakhboz Abdigapporov, Mingon Jeong, Hyunsung Cho, Kyungsik Han, Youngtae Noh, Sung-Ju Lee and Hwajung Hong
ACM CHI 2022 - DOI, PDF

Sad or just jealous? Using Experience Sampling to Understand and Detect Negative Affective Experiences on Instagram
Mintra Ruensuk, **Taewan Kim**, Hwajung Hong, and Ian Oakley
ACM CHI 2022 - DOI, PDF

The Workplace Playbook VR: Exploring the Design Space of Virtual Reality to Foster Understanding and Support of Autistic People in the Workplace
Jennifer G. Kim, **Taewan Kim**, Sungin Kim, Soyeon Jang, Stephanie Lee, Heejung Yoo, Kyungsik Han, and Hwajung Hong
ACM CSCW 2022 - DOI, PDF

VISTA: Understanding Characteristics of Autistic People through a VR-based Interactive Social Skills Training System
Bogoan Kim, Dayoung Jeong, Mingon Jeong, Taehyung Noh, Sung-In Kim, **Taewan Kim**, So-youn Jang, Hee Jeong Yoo, Jennifer G Kim, Hwajung Hong, and Kyungsik Han
ACM VRST 2022 - DOI, PDF

In Helping a Vulnerable Bot, You Help Yourself: Designing a Social Bot as a Care-Receiver to Promote Mental Health and Reduce Stigma
Taewan Kim, Mintra Ruensuk, and Hwajung Hong
ACM CHI 2020 - DOI, PDF

JOURNAL PUBLICATIONS

Promoting Self-Efficacy of Individuals with Autism in Practicing Social Skills in the Workplace Using Virtual Reality and Physiological Sensors: A Feasibility Study
Sung-In Kim, So-youn Jang, **Taewan Kim**, Bogoan Kim, Dayoung Jeong, Taehyung Noh, Mingon Jeong, Kaely Hall, Meelim Kim, Hee Jeong Yoo, Kyungsik Han, Hwajung Hong, Jennifer G. Kim
JMIR Formative Research 2024 - DOI

Understanding University Students' Experiences, Perceptions, and Attitudes Toward Peers Displaying Mental Health-related Problems on Social Network Sites: Online Survey and Interview Study
Taewan Kim, and Hwajung Hong
JMIR Mental Health 2021 - DOI, PDF

Design Constraints and Their Influence Upon Design Outcome
Taewan Kim, James Andrew Self, and Hwajung Hong
Archives of Design Research 2018 - DOI, PDF

LIGHTLY REVIEWED PUBLICATIONS

DiaryMate: Exploring the Roles of Large Language Models in Facilitating AI-mediated Journaling
Taewan Kim, Donghoon Shin, Young-Ho Kim, and Hwajung Hong
ACM CHI 2023 Workshop on Intelligent and Interactive Writing Assistants(In2Writing) - PDF

Leveraging challenges of an algorithm-based symptom checker on user trust through explainable AI
Youjin Hwang, **Taewan Kim**, Junhan Kim, Joonhwan Lee, and Hwajung Hong
ACM CHI 2021 Workshop on Realizing AI in Healthcare: Challenges Appearing in the Wild - PDF

질병의 자가 진단을 위한 알고리즘 기반 증상 확인 애플리케이션의 사용자 경험에 관한 탐색적 연구 **(An exploratory study on the algorithm user experience of a symptom checker application for self-diagnosis)**
Taewan Kim, Youjin Hwang, Junhan Kim, Joonhwan Lee, and Hwajung Hong
The Proceedings of HCI KOREA 2021 - PDF

Studying Students Experiencing Mental Health Problems
Taewan Kim, and Hwajung Hong
CSCW 2018 Workshop on Conducting Research with Stigmatized Populations - PDF

Calm Station: An Interactive Perpetual Desk Object that Reduces Digital Distractions
Taewan Kim, Young-Woo Park, and Hwajung Hong
ACM DIS 2017 DEMO - DOI, PDF, Video

FamCom: A Communication Service Enhancing Conversation Quality Between Elders Residing in Care Hospital and Their Family Member
Mingu Kanng, **Taewan Kim**, Youngjae Kim, and Junghwan Ahn
ACM CHI 2015 Student Design Competition - DOI, PDF, Video

RESEARCH EXPERIENCES

Research Assistant | LG AI Research — Apr 2023 – Present

Development of Human-LLM Interaction Design for Domain Knowledge-based QA System.

- Developed a Question and Answer (QA) system specifically tailored for researchers in the field of AI research.

PhD Research Intern | NAVER AI LAB — Jan 2023 – Sep 2023

Harnessing Large Language Model (LLM) in Real-world Clinical Settings: The Design, Deployment, and Discoveries of MindfulDiary for Psychiatric Patients' Journaling. Authored a research paper as the first author for submission to a top-tier HCI conference, currently under revision.

- Developed an interactive mental health care system using a Large Language Model (LLM) to generate daily reflection prompts for individuals with depression.

- Designed and executed a field deployment study to evaluate the system's effectiveness and impact on mental health.
- Collaborated with a multidisciplinary team, ensuring system appropriateness for clinical settings and considering ethical and privacy concerns.

Research Assistant | Grant Agency: IITP June 2020 – Feb 2023

Development and Evaluation of an Adaptive Virtual Reality System to Enhance Job-Related Social Skills of Adults with Developmental Disorders

- Served as a remote visiting researcher at Georgia Tech during the COVID-19 pandemic.
- Designed an immersive and adaptive Virtual Reality (VR) program for users on the autism spectrum, focusing on enhancing social and job-related skills.
- Developed sensor data-driven feedback models for personalized, real-time guidance in VR training, promoting continuous improvement.

Research Assistant | Grant Agency: National Research Foundation of Korea Nov 2017 – Dec 2020

Developing Fundamental Techniques and Design Guidelines of Persuasive Interaction in a Positive Computing Platform

- Designed a positive computing system to enhance mental health and productivity through persuasive interaction techniques.
- Developed experimental design strategies and guidelines to evaluate persuasive interaction within the platform.

Research Assistant | Grant Agency: National Research Foundation of Korea Mar 2018 – Nov 2020

Toward Developing a Human-Centered Mental Healthcare Platform

- Conducted research on peer support interactions in social media, identifying opportunities for mental healthcare enhancement.
- Designed a mental healthcare system with a social media bot to facilitate user engagement and support.
- Collaborated with a multidisciplinary team for a human-centered, ethical approach, catering to diverse user needs.

SKILLS

Mixed Method User Research

Interview, Survey, Field deployment study, Contextual Inquiry, Grounded theory, Thematic analysis, Usability Testing, Statistics (SPSS, R, Prism)

Programming

Python, JavaScript, React.js, React Native, FastAPI, Firebase, SwiftUI, HTML & CSS, Prompt engineering (for LLM)

UX/UI Design, Fabrication

2D graphic and interface design: Adobe Illustrator, Photoshop, Premiere, Sketch, Figma
3D modeling and fabrication: SIEMENS NX, Rhino, AutoCAD, 3D Printing, Laser cutting, Arduino

TALKS & PANELS

HAI LAB at Seoul National University of Science and Technology Jul 2023

Design for Mental Wellbeing: Exploring the Role of Artificial Intelligence for Self-reflection

NAVER UX Designer Workshop Jul 2023
Exploring Opportunities for Generative AI to Improve Mental Health

NAVER Tech Talk Jan 2023
Exploring the Role of Large Language Models in Retrospective Writing

TEACHING EXPERIENCES

Undergraduate Teaching Assistant | KAIST Sep 2022 – Dec 2022
CS492(36.492): Smart Health: Data-Driven Service Design for Health and Wellbeing

Undergraduate Teaching Assistant | Seoul National University Sep 2019 – Dec 2019
2114.409 Creative Research Practice

ACADEMIC SOCIETIES AND SERVICES

Peer Reviewing
ACM CHI 2023, 2024 Paper
ACM TEI 2018 Paper
Archives of Design Research (ADR) 2022, 2023 Paper
IASDR 2021 Paper

PATENTS

Smart Phone Data-Based Intelligent Stress Prediction and Management Method
US and Korean patent application