Taewan Kim **PhD Candidate**

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Research Interests

As a **human–computer interaction (HCI)** researcher with a design background, I explore **human-centered AI** interaction design grounded on an in-depth understanding of people. Specifically, I focus on designing AI systems to support peoples' self-expression and self-understanding for mental health. My research approach 1) designs a research artifact that enables exploration of human-AI interaction (HAI) design opportunities and 2) extracts empirical findings through in-the-wild study that enables an understanding of systems' impacts on people's behavior and cognition. I have presented my works at major conferences in the HCI field, including ACM **CHI**, **CSCW**, and **DIS**.

Recently, I investigated exploiting prediction algorithms and explainability that facilitate self-reflection for the mental-wellbeing (Accepted to CHI 2022). I also explored design space of human-social bot interaction for assisting users on revisit their past experiences by support-giving experience with the bot (Accepted to CHI 2020).

Based on my strength in **mixed-method research** and **human-centered design**, I create artifacts, methodologies, and frameworks to inspire meaningful and positive algorithmic experiences for HCI researchers and practitioners.

Keywords: Human-computer Interaction, User Experience Research, Human-centered Design, Human-ai interaction, VR/AR, Autism, Mental Well-being, Mental health, Social Computing,

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Education

Sep. 2021 - 2023 (EST) **KAIST**, Department of Industrial Design
Ph.D. student
Adviser: Prof. Hwajung Hong

Sep. 2018 - Aug. 2021 **Seoul National University**, Interdisciplinary Program in Cognitive Science
Ph.D. Candidate (*Transferred to KAIST)
Adviser: Prof. Hwajung Hong

Mar. 2016 - Feb. 2018 **Ulsan National Institute of Science and Technology**, School of Creative Design Engineering
M.E. in Creative Design Engineering
Dissertation: Helping Friends Suffering Mental Health Issues: Challenges and Opportunities for Social support on Social Media from the Peer's Point of View
Adviser: Prof. Hwajung Hong

Sep. 2011 - Feb. 2016 **Handong University**, Department of Industrial Design
B.S in Product Design (Cum laude)

Work Experience

Jan. 2023 - current **Research Intern** at **NAVER AI Lab (with Dr. Young-Ho Kim)**
Exploring the Potential of LLM Prompt Generation for Promoting Daily Reflection in Individuals with Depression

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Publications

Conference papers / Journal articles

Taewan Kim, Donghoon Shin, Young-Ho Kim, and Hwajung Hong. "DiaryMate: Exploring the Roles of Large Language Models in Facilitating AI-mediated Journaling" (Under Revision)

Taewan Kim, Haesoo Kim, Hayeon Lee, Hwarang Goh, Shakhboz Abdigapporov, Mingon Jeong, Hyunsung Cho, Kyungsik Han, Youngtae Noh, Sung-Ju Lee and Hwajung Hong. "Prediction for Retrospection: Integrating Algorithmic Stress Prediction into Personal Informatics Systems for College Students' Mental Health" *Proceedings of the 2022* ***CHI Conference*** *on Human Factors in Computing Systems*. 2022.

Mintra Ruensuk, **Taewan Kim**, Hwajung Hong, and Ian Oakley. "Sad or just jealous? Using Experience Sampling to Understand and Detect Negative Affective Experiences on Instagram" *Proceedings of the 2022* ***CHI Conference*** *on Human Factors in Computing Systems*. 2022.

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

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. "VISTA: Understanding Characteristics of Autistic People through a VR-based Interactive Social Skills Training System" *Proceedings of the ACM* ***VRST*** *2022*

Taewan Kim, and Hwajung Hong. "Understanding University Students' Experiences, Perceptions, and Attitudes Toward Peers Displaying Mental Health-related Problems on Social Network Sites: Online Survey and Interview Study" ***Journal of Medical Internet Research*** *- Mental Health* 2021

Taewan Kim, Mintra Ruensuk, and Hwajung Hong. "In Helping a Vulnerable Bot, You Help Yourself: Designing a Social Bot as a Care-Receiver to Promote Mental Health and Reduce Stigma." *Proceedings of the 2020* ***CHI Conference*** *on Human Factors in Computing Systems*. 2020.

Taewan Kim, James A. Self, and Hwajung Hong. "Design Constraints and Their Influence upon Design Outcome." ***Archives of Design Research*** 31.4 2018: 23-41.

Poster / Workshop

Taewan Kim, Donghoon Shin, Young-Ho Kim, and Hwajung Hong. "DiaryMate: Exploring the Roles of Large Language Models in Facilitating AI-mediated Journaling" ***ACM CHI2023 Workshop*** *on Intelligent and Interactive Writing Assistants(In2Writing)*. 2023

Youjin Hwang, **Taewan Kim,** Junhan Kim, Joonhwan Lee, and Hwajung Hong. "Leveraging challenges of an algorithm-based symptom checker on user trust through explainable AI" ***ACM CHI2021 Workshop*** *on Realizing AI in Healthcare: Challenges Appearing in the Wild*. 2021

Taewan Kim, Youjin Hwang, Junhan Kim, Joonhwan Lee, and Hwajung Hong. "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" *The Proceedings of **HCI KOREA** 2021*.

Taewan Kim, and Hwajung Hong. "Studying Students Experiencing Mental Health Problems" ***ACM CSCW 2018 Workshop*** *on Conducting Research with Stigmatized Populations*. 2018

Taewan Kim, Young-Woo Park, and Hwajung Hong. "Calm Station: An Interactive Perpetual Desk Object that Reduces Digital Distractions." *Proceedings of the 2017 **ACM Conference Companion Publication on Designing Interactive Systems (DIS)***. 2017.

Mingu Kang, **Taewan Kim**, Youngjae Kim, and Junghwan Ahn. "FamCom: A Communication Service Enhancing Conversation Quality Between Elders Residing in Care Hospital and Their Family Member." *Proceedings of the 33rd Annual ACM Conference Extended Abstracts on Human Factors in Computing Systems **(CHI)***. 2015.

Research Project

Jan. 2023 - current **Research Intern |** NAVER AI Lab
Title: **Exploring the Potential of LLM Prompt Generation for Promoting Daily Reflection in Individuals with Depression**

- Developed an interactive system for mental health care using a Large-language model (LLM)
- Study design and planning deployment in the clinical setting

June. 2020 - Feb. 2023 **Research Assistant |** Grant Agency: National Research Foundation of Korea
Title: **Development and Evaluation of an Adaptive Virtual Reality System to Enhance the Job-Related Social Skills of Adults with Developmental Disorders**

- Designed VR program for social and job training of autism spectrum users
- Designed sensor data-based feedback models for VR training situations

June. 2020 - May. 2021 **Research Assistant |** Grant Agency: National Research Foundation of Korea
Title: **Development of AI-based realistic VR system and discovery of technology elements for social development of autistic people**

- **Remote visiting researcher at Georgia Tech** (due to the Covid-19)
- Designed VR program for social and job training of autism spectrum users

Nov. 2017 - Dec. 2020 **Research Assistant |** Grant Agency: National Research Foundation of Korea
Title: **Developing fundamental techniques and design guidelines of persuasive interaction in a positive computing platform**

- **Designed a positive computing system for mental health and productivity**
- Development of experimental design and implementation guidelines to verify the effectiveness of persuasive interaction design services

Mar. 2018 - Nov. 2020 **Research Assistant |** Grant Agency: National Research Foundation of Korea
Title: **Toward Developing a Human-Centered Mental Healthcare Platform**

- **Discovered opportunities for the mental health care system based on peer support interactions in social media**
- Designed mental health care system using social media bot

Teaching Experience

Sep. 2022 - Dec. 2022	**Undergraduate Teaching Assistant |** KAIST CS492(36.492): Smart Health: Data-Driven Service Design for Health and Wellbeing
Sep. 2019 - Dec. 2019	**Undergraduate Teaching Assistant |** Seoul National University 2114.409 Creative Research Practice
Apr. 2018 - Mar. 2019	**Assistant Researcher |** Institute of Communication Research, Seoul National University

Awards

2015	**Student Design Competition, Top4 |** ACM CHI 2015
2015	**UNIST Creative Design and Engineering Competition, Silver** | UNIST
2014	**Undergraduate Research Competition, Second Place** | Handong Univ.
2014	**Samsung Tomorrow Solution Award, Excellence award** | SAMSUNG

Skills

User Research, Qualitative/Quantitative Analysis
Interviewing, Conducting surveys, Field research, Contextual Inquiry, Mixed method
Grounded theory, Thematic analysis, Statistics (SPSS, R, Prism)

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

Programming/Technical skills
Python, JavaScript, React, React Native, SwiftUI, HTML & CSS
Prompt engineering (for LLM)

Patents

Smart phone data-based intelligent stress prediction and management method
US and Korea Patent application

Cardiopulmonary Resuscitation Plate for a First-aid Treatment
Korea Patent No. 10-1628073

AR simulator
Korea Design Protection No. 30-0938066

Academic Societies and Services

Peer Reviewing
ACM CHI 2023 Paper
IASDR 2021 Paper
ACM TEI 2018 Paper