Kyunghwan Kim

MASTER'S STUDENT @ SCHOOL OF COMPUTING, KAIST

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*" I connect **Humans** with **Computers** through novel **Physical Interaction** techniques!! "*

Education

Korea Advanced Institute of Science and Technology (KAIST)   *Mar. 2023 ~ Present*

M.S. in COMPUTER SCIENCE (SCHOOL OF COMPUTING)   *Daejeon, Republic of Korea*

· Human Computer Interaction Lab (HCIL) | *Advisor: Prof. Geehyuk Lee*

Gwangju Institute of Science and Technology (GIST)   *Mar. 2017 ~ Feb. 2023*

B.S. in ELECTRICAL ENGINEERING AND COMPUTER SCIENCE   *Gwangju, Republic of Korea*

Minor in CULTURE TECHNOLOGY (CT), *Integrated Minor in* ECONOMICS *and* BUSINESS ADMINISTRATION

· Human-Centered Intelligent Systems (HCIS) Lab | *Advisor: Prof. Seungjun Kim*
· Thesis: Analysis of the Effect of Vection Generated by Directional Optical Flow in the VR Redirected Walking Scenario
· **Best B.S. Thesis Award** *(1st place)* | Graduated **Cum Laude**

University of California, Berkeley   *Summer 2018*

2018 Summer Session Program in COMPUTER SCIENCE (CS61C) *and* STATISTICS (STAT20)   *Berkeley, CA, USA*

Research Experiences

Human Computer Interaction Lab (HCIL), KAIST   *Mar. 2023 ~ Present*

M.S. STUDENT | *Advisor: Prof. Geehyuk Lee*   *Daejeon, Republic of Korea*

· Began a new journey as an M.S. student!

Human-Centered Intelligent Systems (HCIS) Lab, GIST   *May. 2021 ~ Dec. 2022*

UNDERGRADUATE INTERN | *Advisor: Prof. Seungjun Kim*   *Gwangju, Republic of Korea*

· Visited MIT for on-site discussion and sensor development, as a GIST-MIT Joint Research Team on explainable AI services for drivers.
· Developed a VR experiment environment for the research on augmented sense at Redirected Walking. *(Unity, Arduino, VIVE Pro Eye)*
· Developed a 3D depth-based in-car AR environment that synchronizes to the movement of the car. *(Unity, ZED Mini, Oculus Quest 2)*
· Assisted research on Contextual Visibility of Public Signage.

Human-Centered Computer Systems (HCS) Lab, Seoul National University (SNU)   *Winter 2022*

UNDERGRADUATE INTERN | *Advisor: Prof. Youngki Lee*   *Seoul, Republic of Korea*

· Conducted research on designing Human-AI Interaction (HAI) and User Interface (UI) in an XR environment. *(Unity, Oculus Quest 2)*

Computer Vision Lab, GIST   *Summer 2017*

UNDERGRADUATE INTERN | *Advisor: Prof. Kin Choong Yow*   *Gwangju, Republic of Korea*

· Assisted research on the implementation of Free Viewpoint TV via OpenCV.

Publications

[3] **STButton: Exploring Opportunities for Buttons with Spatio-Temporal Tactile Output**
Yeonsu Kim, Jisu Yim, Jaehyun Kim, **Kyunghwan Kim** and Geehyuk Lee
CHI '24 Interactivity (Demo)

[2] **Virtual Rolling Temple: Expanding the Vertical Input Space of a Smart Glasses Touchpad**
Kyunghwan Kim and Geehyuk Lee
UIST '23 Adjunct (Demo)   [LINK]

[1] **Auditory and Olfactory Stimuli-Based Attractors to Induce Reorientation in Virtual Reality Forward Redirected Walking**
Jieun Lee, Seokhyun Hwang, **Kyunghwan Kim**, and SeungJun Kim
CHI '22 Extended Abstracts (LBW)   [LINK]

Patents

[3] **Utilizing the Think-aloud Protocol and Generative AI Models to Identify Problematic Moments in Lengthy Recordings of XR User Study**
Geehyuk Lee, Sunbum Kim, and **Kyunghwan Kim**
KR 10-2024-0030536, Application Date: 04 Mar. 2024

[2] **Button System Providing Spatiotemporal Tactile Output for Feedforward and Feedback**
Geehyuk Lee, Yeonsu Kim, Jisu Yim, Jaehyun Kim, and **Kyunghwan Kim**
KR 10-2024-0012988, Application Date: 29 Jan. 2024

[1] **Method and Device for Enabling 2D Input Using Linear Touch Sensor and Laser Speckle Sensor**
Geehyuk Lee and **Kyunghwan Kim**
KR 10-2024-0006763, Application Date: 16 Jan. 2024

Teaching Experiences

Wearable User Interface (CS486), KAIST
Spring 2024
TEACHING ASSISTANT
Daejeon, Republic of Korea
· Assisted hands-on practice sessions on Arduino physical user interfaces and provided general comments on class team projects.

Introduction to System Programming (CS230), KAIST
Spring 2023
TEACHING ASSISTANT
Daejeon, Republic of Korea
· Coordinated overall project on building a simple machine language compiler.

Computer Programming (GS1401), GIST
Spring 2018 and Spring 2022
TEACHING ASSISTANT
Gwangju, Republic of Korea
· Assisted weekly lab sessions and made a few practice questions for the lectures of 85 and 108 students, respectively.

Open GIST Science Lab, GIST
Jul. 2017
SESSION ASSISTANT
Gwangju, Republic of Korea
· Assisted local high school students' Raspberry Pi experiments in a social contribution event of GIST.

Extracurricular Activities

Daedeok Toastmasters: International Association to Develop Public Speaking Skills
Jul. 2023 ~ Present
VICE PRESIDENT OF EDUCATION
· Provided feedback on speeches at the meeting and managed members' *Pathway* progress along with designing club materials.

GDSC (Google Developer Student Clubs) GIST
Oct. 2021 ~ Jul. 2022
CORE TEAM: RESEARCH & DEVELOPMENT DIVISION
· Managed & planned the overall technical progress and the homepage of the club, as well as its AI/ML department.
· Hosted a 'CV Yourself With OverLeaf' session for college students, so that they can learn about and make their own CVs with a template.

EAT (English Adventure Time): GIST English Conversation Club
Dec. 2020 ~ Dec. 2022
MENTORING & FEEDBACK MANAGER | *Advisor: Prof. Ellis Lee, Prof. John Wills*
· Provided counsel for student hosts of each session about conversational skills and overall session management.
· Planned and designed various club help-out materials and the recruiting process, in company with the professors.

G.OnNaRae: GIST Student Ambassador
Sep. 2017 ~ Dec. 2018
FOREIGN GUEST PROTOCOL MANAGER, WEB CONTENTS DESIGNER, AND OFFICIAL BLOG MANAGER
· Had exclusive responsibility for foreign tasks and foreign guest protocol.
· Planned and implemented various designs of SNS contents and on/offline events to promote GIST.

GIST Toastmasters: International Association to Develop Public Speaking Skills
Sep. 2017 ~ Dec. 2018
VICE PRESIDENT OF IT AND DESIGN
· Took general care of the club as vice president, along with designing club material and managing the club homepage.

My Little GIST: GIST Infinite Challenge Project
May. 2017 ~ Jan. 2018
TEAM LEADER, EXECUTIVE PRODUCER, AND VIDEO EDITOR
· Produced 10 short video clips that can closely relate to the daily lives of people in GIST, and got favorable reactions.

Skills

Extended Reality	**Unity** & C# (with SteamVR, VIVE Pro Eye, Oculus Quest 2, and ZED Mini)
Programming	**C**, **Arduino**, Python (with Tensorflow and Pytorch), VBS, Java
Design & Media	*Adobe*: **Premiere**, **Photoshop**, Illustrator	*Autodesk*: **123D**, Sketchbook
Linguistic	*Native*: **Korean**	*Fluent*: **English** (**TOEIC 970**/990 (April 2022), **New TEPS 448**/600 (May 2022))

Scholarships & Fundings

Government Funded Scholarship for KAIST Graduate Students *Spring 2023 ~ Present*
KAIST

Government Funded Scholarship for GIST Undergraduate Students *Spring 2017 ~ Fall 2022*
GIST College

Funding for Business Trip to Massachusetts Institute of Technology (MIT) *Jul. 2022*
GIST Institute of Integrated Technology *(As Part of the GIST-MIT Joint Research Program)*

GIST Scholarship for High Academic Achievement *Fall 2017 and Spring 2021*
GIST College

GIST Scholarship for Summer Session Program Abroad *Summer 2018*
GIST College *(More details in the Education section)*

GIST Scholarship for GIST Infinite Challenge Project *May. 2017 ~ Jan. 2018*
GIST College *(More details in the Extracurricular Activities section)*

Coursera Certificates

User Interface Design	· Introduction to UI Design
	· Human-Centered Design: an Introduction
Extended Reality for Everybody	· User Experience & Interaction Design for AR/VR/MR/XR
	· Developing AR/VR/MR/XR Apps with WebXR, Unity & Unreal
DeepLearning.AI Professional	· Natural Language Processing in TensorFlow

Military Service

Republic of Korea Air Force *(Obligation Fulfilled)* *Jan. 2019 ~ Nov. 2020*
Air Force Operations Command (AFOC) S&S Group, Ground Transport Management Team
· Automated vehicle managerial workflow with HanCell VBA (similar to Excel VBS) scripting.