

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)

M.S. in COMPUTER SCIENCE (SCHOOL OF COMPUTING)

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

Mar. 2023 ~ Present

Daejeon, Republic of Korea

Gwangju Institute of Science and Technology (GIST)

B.S. in ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

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**

Mar. 2017 ~ Feb. 2023

Gwangju, Republic of Korea

University of California, Berkeley

2018 Summer Session Program in COMPUTER SCIENCE (CS61C) and STATISTICS (STAT20)

Summer 2018

Berkeley, USA

Research Experiences

Human Computer Interaction Lab (HCIL), KAIST

M.S. STUDENT | Advisor: Prof. Geehyuk Lee

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

Mar. 2023 ~ Present

Daejeon, Republic of Korea

Human-Centered Intelligent Systems (HCIS) Lab, GIST

UNDERGRADUATE INTERN | Advisor: Prof. Seungjun Kim

- 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.

May. 2021 ~ Dec. 2022

Gwangju, Republic of Korea

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

UNDERGRADUATE INTERN | Advisor: Prof. Youngki Lee

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

Winter 2022

Seoul, Republic of Korea

Computer Vision Lab, GIST

UNDERGRADUATE INTERN | Advisor: Prof. Kin Choong Yow

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

Summer 2017

Gwangju, Republic of Korea

Publications

[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] **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
- [2] **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 10-2023-0158729, Application Date: 16 Nov. 2023
- [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

TEACHING ASSISTANT

Spring 2024

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

TEACHING ASSISTANT

Spring 2023

Daejeon, Republic of Korea

- Coordinated overall project on building a simple machine language compiler.

Computer Programming (GS1401), GIST

TEACHING ASSISTANT

Spring 2018 and Spring 2022

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

SESSION ASSISTANT

Jul. 2017

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

- Took general care of the club as vice president, along with members' *Pathway* progress management and club materials design.

GDSC (Google Developer Student Clubs) GIST

Oct. 2021 ~ Jul. 2022

CORE TEAM: RESEARCH & DEVELOPMENT DIVISION

- Hosted a 'CV Yourself With OverLeaf' session for college students, so that they can learn about and make their own CVs with a template.
- Managed & planned the overall technical progress and the homepage of the club, as well as its AI/ML department.

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 professor.

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 KAIST	<i>Spring 2023 ~ Present</i>
Government Funded Scholarship for GIST Undergraduate Students GIST COLLEGE	<i>Spring 2017 ~ Fall 2022</i>
Funding for Business Trip to Massachusetts Institute of Technology (MIT) GIST INSTITUTE OF INTEGRATED TECHNOLOGY (As Part of the GIST-MIT Joint Research Program)	<i>Jul. 2022</i>
GIST Scholarship for High Academic Achievement GIST COLLEGE	<i>Fall 2017 and Spring 2021</i>
GIST Scholarship for Summer Session Program Abroad GIST COLLEGE (More details in the Education section)	<i>Summer 2018</i>
GIST Scholarship for GIST Infinite Challenge Project GIST COLLEGE (More details in the Extracurricular Activities section)	<i>May. 2017 ~ Jan. 2018</i>

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) AIR FORCE OPERATIONS COMMAND (AFOC) S&S GROUP, GROUND TRANSPORT MANAGEMENT TEAM	<i>Jan. 2019 ~ Nov. 2020</i>
· Automated vehicle managerial workflow with HanCell VBA (similar to Excel VBS) scripting.	