

# 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, CA, 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

- [4] **Evaluation of visual, auditory, and olfactory stimulus-based attractors for intermittent reorientation in virtual reality locomotion**  
Jieun Lee, Seokhyun Hwang, **Kyunghwan Kim**, and SeungJun Kim  
*Virtual Reality '24 (Springer)* [LINK]
- [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

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- [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

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### Wearable User Interface (CS486), KAIST

TEACHING ASSISTANT

Spring 2024

Daejeon, Republic of Korea

- Organized 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

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### 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

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**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

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### 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

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**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

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### 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.