# Hyeongcheol Kim

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+65 87505674 | Singapore-based | Korean (native), English (proficient)

## EDUCATION

**National University of Singapore**
Ph.D. in Computer Science (Specialization: Human-Computer Interaction)
Advisor: Dr. Shengdong Zhao (Synteraction Lab)
Thesis title: In-situ digital content creation and retrieval towards new mobile usage

2015 - 2023
Singapore

**Korea University**
MS.c. in Computer Science (Specialization: Human-Computer Interaction)
Advisor: Dr. Jerald Jeonghyeon Kim (Digital eXperience Lab)
Thesis title: Designing of multimodal feedback for enhanced multitasking performance

2008 - 2010
Seoul, Korea

**Korea University**
BS.c. in Computer Science

2003 - 2007
Seoul, Korea

## RESEARCH INTEREST

Human-Computer / Human-AI Interaction | In-situ digital content creation / retrieval | [Head-up computing](#)
Multimodal interaction / feedback | Human-centered / Data-driven interaction | Multitasking

## TEACHING INTEREST

Human-Computer / Human-AI Interaction | User Interface / Experience design & development
Object-Oriented Programming | Software Engineering | Augmented / Virtual Reality

## EMPLOYMENT

**Visiting Researcher** (Synterlaction Lab, City University of Hong Kong)

Singapore / HK
May 2024
- Ongoing

***On-going project***
1) Designing natural and effective referential communication between human speakers and generative AI-driven agent listeners | Co-authors : Hyeongcheol Kim, Shendong Zhao, Jae-dong Lee, Rishikesh Panda
- As a first author, I am leading this research project, aiming at exploring how human-to-human communication strategies can be adopted into the design of Human-AI communication across diverse device platforms to make it natural and effective.
- With python, I am focusing on building a prompt pipeline allowing users to have natural and effective referential communication with multimodal generative AI-model driven agents.

2) Designing wearable generative AI-driven agents to extend daily learning opportunities and knowledge explorations | Co-authors : Runze Cai, Nuwan zanaka, Hyeongcheol Kim, Sonne chen, Shendong Zhao, Yun Huang, and David Hsu
- As a co-author, I contributed to this project by proposing ideas, developing concepts, designing the study, and conducting the literature review. The project is currently being prepared for submission to CHI 2025.

3) Ubieditor: Facilitating the creation of lengthy multimedia document on smart-glasses on-the-go scenarios via Human-AI cooperation | Co-authors :  Zhou chen, Hyeongcheol Kim, Shendong Zhao, Ashwin Ram
- As a co-author, I am contributing to this project by guiding initial idea development, setting research agenda with the first author, and helping conducting empirical studies.

4) Glassmail+: Assisting with personal information management via AI-powered agents on smart glasses | Co-authors : Zhou chen, Shendong Zhao, Ashwin Ram, Hyeongcheol Kim
  - As a co-author, I am contributing to this project by developing new strategies for personal information management on smart-glasses from the perspective of utilizing multimodal-inputs and integrating the inputs with generative AI-driven agents

5) MIR vs UIR : Exploring spatial, gestural multimodal information retrieval interface designs in comparison to conventional design approaches for unimodal information retrieval interfaces | Co-authors :Wang silang, Hyeongcheol Kim, Shendong Zhao, Nuwan Zanaka
  - As a co-author, I am contributing to this project by guiding and advising the first-author to set up initial research questions and agenda, based on strong literature review and preliminary data analysis at the current stage.

**Teaching assistant (**School of Computing, National University of Singapore)  
1) A full-time Head TA : Software Engineering (CS2013/T: Prof. Damith C. Rajapakse)
  - Teaching 50 students per semester
  - Teaching Unified Modeling Language (UML) / Object-Oriented Programming (OOP)
  - Supervising Java-based projects (intelliJ / Git)
  - The last student feedback 4.6/5.0, 2023/24 semester 2

2) A part-time TA : User Interface Development (CS324: Prof. Shengdong Zhao)
  - 35 students per semester (for 1 year)
  - Teaching UI/UX fundamental concept, design and prototyping process / user study and field test
  - The last student feedback 4.3/5.0, 2017/18 semester 2

*Singapore Jan 2020 - Ongoing*

**Technical Assistant** (Business Data Analysis & Strategy Consultation Division, Deloitte)  
1) Retrieved and extracted insightful data from a large-scale customer database (using SQL) to assist in consulting on Shinsegae Inc.'s business strategies / Info Visualization (using Spotfire)

*Seoul, Korea Feb - Jun 2015*

**Senior Software Engineer** (Chief Technology Officer Division, LG Electronics)  
1) Smart TV device solution team
  - Each - world 1st product release in market (Android TV : 2012, webOS TV : 2014)
  - Application development for native TV functions for both
  - Java Native Interface (JNI) development for invoking native TV functions (C/C++-based) from the Android framework (Java-based)
  - Android TV-based digital signage prototyping: TV Remote controller-based 3D space navigation interaction design and development
  - UI / UX management of home application for webOS TV (HTML/CSS/JavaScript-based)

*Seoul, Korea Jun 2012 - 2014*

*\* As part of national service (1.5 years) - completed*

**Senior Software Engineer** (COWON systems)  
1) Hand-held portable multimedia device solution team
  - Android-based world 1st portable multimedia playback devices (D2+/D3, 2011)
  - Co-worked with cross-functional teams for customizing android home application on D2+/D3
  - User research with actual users (20+, focused user group) to investigate initial user experiences
  - Testing, bug-fixing, and distributing firmware for Linux-embedded systems in multimedia playback devices with cooperation with hardware teams
  - 3rd party (Telechips, Inc.) android motherboard testing / porting firmware into portable multimedia playback linux-embedded devices with tests

*Seoul, Korea Nov 2010 - May 2012*

*\* As part of national service (1.5 years)*

## PUBLICATION

Journal & Conference Papers (Denoted by *J* and *C*, respectively)

[*j.1*]  **SelfIE: Self-Initiated Explorable Instructions Towards Enhanced User Experience**  
**Hyeongcheol Kim**, Katherine Fennedy, Georgia Zhang, Chan Liu, Shengdong Zhao  
*arXiv preprint arXiv:2407.08501, 2024 (under review in the International Journal of Human-Computer Interaction)*

[*c.3*]  **Paracentral and near-peripheral visualizations: Towards attention-maintaining secondary information presentation on OHMDs during in-person social interactions**  
Nuwan Janaka, Chloe Haigh, **Hyeongcheol Kim**, Shan Zhang, Shengdong Zhao  
*SIG CHI 2022: ACM Conference on Human Factors in Computing Systems (Best Paper Honorable Mention)*

[*c.2*]    **LiveSnippets: Voice-based Live Authoring of Multimedia Articles about Experiences**
**Hyeongcheol Kim**, Shengdong Zhao, Chan Liu, Kotaro Hara
*MobileHCI 2020: International Conference on Human-Computer Interaction with Mobile Devices and Service*

[*c.1*]    **Designing of multimodal feedback for enhanced multitasking performance**
**Hyeongcheol Kim**, Gerald Jeonghyeon Kim
*SIG CHI 2011: ACM Conference on Human Factors in Computing Systems*

Posters, Demos, and Workshop Papers (Denoted by *P*, *D* and *W*, respectively)

[*p.1*]    **Ringeraction: Coordinated thumb-index interaction using a ring**
Sarthak Ghosh, **Hyeongcheol Kim,** Yao Cao, A. Wessels, Simon perrault, Shengdong Zhao
*SIG CHI 2016: ACM Conference on Human Factors in Computing Systems*

[*p.2*]    **"What's this?": Understanding User Interaction Behaviour with Multimodal Input Information Retrieval System**
Silang Wang, **Hyeongcheol Kim**, Nuwan Janaka, Kun Yue, Hoang-Long Nguyen, Shengdong Zhao, Haiming Liu, Khanh-Duy Le
*MobileHCI 2024: International Conference on Human-Computer Interaction with Mobile Devices and Service*

## ACADEMIC SERVICES

**Reviewer** (Since Jun 2020 - Ongoing)
- CHI 2019 | 2021 | 2023-25
- CHI PLAY 2024
- UIST 2024
- IMWUT 2024
- CSCW 2020
- ISMAR (Conference / Journal) | 2023-24
- MobileHCI 2024
- SUI 2024

**Student Volunteer**
- ACM SIGCHI 2016: Coordinated physical paper sessions, panel discussions, and managed registration duties

## SKILLS

**Research:**

**Quantitative**: Surveys, A/B test, Tree-testing | **Statistical Analysis**: ANOVA, T-Tests, Chi-square test, Regression analys
**Qualitative**: Card-sorting, Usability / Field study, Focus groups, In-depth / 1:1 user interviews, Diary (longitudinal) study
**Others:** Within-/Between- subjects-based user studies, Wizard-of-Oz experimental protocols
**Tools:** JASP / R-studio / MatLab / Atlas.ti / Indeemo

**UI / UX / System Design | Prototyping (**notated with relevant research works outlined in the publication section above)**:**

User scenario creation / mapping (*p.1*)
Human-centered design (*c.2, j.1*)
Multimodal interaction (*c.2, j.1*) and feedback (c.1) design for effective multitasking (c.1)
Iterative design with functioning prototypes  (*c.2, j.1*)
Prototyping on diverse hardware platforms
    - Laptop/Desktop (*p.1, c.1, j.1* - Windows-based) / Mobile (*c.2, j.1* - Android-based) / Smart-glasses (*c.3, j.1* - Hololens 2 with Unity) / Embedded devices (*c.1, j.1* - Arduino + Wi-Pi chipsets, *p.1* - Smart ring with QT, *c.1* - Arduino + Tactile vibrators)
Human-Al Communication / Cooperation Design / Prototyping
    - Ongoing projects (Building prompt pipeline using generative AI-driven models, e.g., ChatGPT or Gemini.)

**Programming:**

Working-experience: Git / SCV / Java / C / C++ / C# / JavaScript / HTML / CSS | Knowledgeable **:** Python / SQL

## AWARD & ACHIEVEMENTS

**Recognitions for Outstanding Reviews**                                                 Nov 2023
- Awarded by the ACM SIGCHI 2023 conference on human factors in computer systems

**Honorable Mention**                                                                     May 2022
- Awarded by the ACM SIGCHI 2022 conference on human factors in computer systems

**NUS Staff Travel Award**                                                               Sep 2020
- Awarded by National University of Singapore

**NUS Research Scholarship**                                                           Aug 2015 -
- Awarded by Ministry of Education, Singapore                                               2019

**Brain Korea (BK) 21 Research Scholarship**                                            Aug 2008
- Awarded by Ministry of Education, Korea                                                  - 2010


## SELECTED PRESS

- NUS NEWS | Capturing memories in real-time through LiveSnippets [Research impact] : Dec 23, 2020
  - https://news.nus.edu.sg/capturing-memories-in-real-time-through-livesnippets/
- ZME SCIENCE | Researchers stack travel thoughts in the moment with 'write on-the-go' app : Jan 3, 2021
  - https://www.zmescience.com/science/travel-thoughts-app-423432/


## REFEREES

- Available upon request