



# Jungeun Lee

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## SUMMARY

I am Jungeun Lee, a Ph.D. student at [HIS Lab](#), CSE, POSTECH, advised by Prof. [Inseok Hwang](#). My research interests lie in HCI and ubiquitous computing, especially in personalization. I am also engaged in interdisciplinary research in areas such as health and child education.

My research focuses on **principled generative personalization** — personalizing common norms for individuals based on their unique characteristics and personalities by generating distinct embodiments. Currently, I am actively utilizing generative AI to understand individual diversity, create tailored embodiments for each person, and naturally integrate these into daily life. I hope that my research contributes to respecting individual uniqueness and diversity.

## EDUCATION

<b>Pohang University of Science and Technology (POSTECH)</b> <i>Ph.D. Student, Computer Science and Engineering</i>	Pohang, South Korea Sep 2021 – Current
<b>Pohang University of Science and Technology (POSTECH)</b> <i>B.S., Computer Science and Engineering</i> Magna Cum Laude	Pohang, South Korea Feb 2017 – Aug 2021

## HONORS & AWARDS

[H.8] <b>Popular Choice Honorable Mention Award for Interactivity</b> ACM CHI 2025	Apr 2025
[H.7] <b>Best Presentation Award</b> HCI Korea 2025 - Top Conference Session	Feb 2025
[H.6] <b>Best Paper Honorable Mention Award</b> ACM CHI 2024	May 2024
[H.5] <b>People's Choice Award for Demos</b> ACM UbiComp 2023	Oct 2023
[H.4] <b>BK21 Best Paper Award</b> Dept of CSE, POSTECH	Jan 2023
[H.3] <b>National Scholarship for Science and Engineering (Full Scholarship)</b> Ministry of Science and ICT	Mar 2020 - Aug 2021
[H.2] <b>The 7th POSTECH Hackathon (2nd Prize)</b> POSTECH	Nov 2019
[H.1] <b>Global Leadership Program (≈ USD 9.0K)</b> Dept of CSE, POSTECH	Mar 2017 - Feb 2019

## PUBLICATIONS (REGULAR PAPERS)

[C.4] <b>Toward Affective Empathy via Personalized Analogy Generation: A Case Study on Microaggression</b> <i>Hyojin Ju, Jungeun Lee, Seungwon Yang, Jungseul Ok, Inseok Hwang</i> Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems ( <b>CHI</b> )	2025
[C.3] <b>Open Sesame? Open Salami! Personalizing Vocabulary Assessment-Intervention for Children via Pervasive Profiling and Bespoke Storybook Generation</b> (🏆 <b>Best Paper Honorable Mention Award</b> ) <i>Jungeun Lee, Suwon Yoon, Kyoosik Lee, Eunae Jeong, Jae-Eun Cho, Wonjeong Park, Dongsun Yim, Inseok Hwang</i> Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems ( <b>CHI</b> )	2024

- [C.2] **ProxiFit: Proximity Magnetic Sensing Using a Single Commodity Mobile toward Holistic Exercise Monitoring** 2023  
*Jiha Kim, Younho Nam, Jungeun Lee, Young-Joo Suh, Inseok Hwang*  
*Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT) / Presented at ACM UbiComp 2023)*
- [C.1] **SleepGuru: Personalized Sleep Planning System for Real-life Actionability and Negotiability** 2022  
*Jungeun Lee, Sunnam Kim, Minki Cheon, Hyojin Ju, JaeEun Lee, Inseok Hwang*  
*Proceedings of the 35th Annual ACM Symposium on User Interface Software and Technology (UIST)*

## PUBLICATIONS (ADJUNCT)

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### DOCTORAL COLLOQUIUM

- [A.4] **Hyper-personalizing Common Norms through Principled Bespoke Generation** 2023  
*Jungeun Lee, Inseok Hwang*  
*UbiComp/ISWC '23 Adjunct: Adjunct Proceedings of the 2023 ACM International Joint Conference on Pervasive and Ubiquitous Computing & the 2023 ACM International Symposium on Wearable Computing (UbiComp)*

### DEMO/INTERACTIVITY

- [A.5] **Toward Affective Empathy via Personalized Analogy Generation: A Case Study on Microaggression** 2025  
**(🏆 Popular Choice Honorable Mention Award for Interactivity)**  
*Hyojin Ju, Jungeun Lee, Seungwon Yang, Jungseul Ok, Inseok Hwang*  
*CHI EA '25: Proceedings of the Extended Abstracts of the CHI Conference on Human Factors in Computing Systems (CHI)*
- [A.3] **Demonstrating ProxiFit: Proximal Magnetic Sensing using a Single Commodity Mobile toward Holistic Weight Exercise Monitoring** (🏆 *People's Choice Award for Demos*) 2023  
*Jiha Kim, Younho Nam, Jungeun Lee, Young-Joo Suh, Inseok Hwang*  
*UbiComp/ISWC '23 Adjunct: Adjunct Proceedings of the 2023 ACM International Joint Conference on Pervasive and Ubiquitous Computing & the 2023 ACM International Symposium on Wearable Computing (UbiComp)*
- [A.2] **Demonstrating SleepGuru: Personalized Sleep Planning System for Real-life Actionability and Negotiability** 2022  
*Jungeun Lee, Hyojin Ju, Sunnam Kim, Minki Cheon, JaeEun Lee, Inseok Hwang*  
*Adjunct Proceedings of the 35th Annual ACM Symposium on User Interface Software and Technology (UIST)*
- [A.1] **TouchVR: A Modality for Instant VR Experience** 2022  
*Sungjae Cho, Jungeun Lee, Inseok Hwang*  
*Adjunct Proceedings of the 35th Annual ACM Symposium on User Interface Software and Technology (UIST)*

## INVITED TALKS

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- HCI Korea (KHCI) 2025** Feb 2025  
 Oral Presentation at Doctoral Consortium *Hongcheon, Korea*  
 Oral Presentation at Top Conference Session (🏆 *Best Presentation Award*)
- Korea Computer Congress (KCC) 2024** Jun 2024  
 Oral Presentation at Top Conference Session *Jeju, Korea*
- Topic - *Open Sesame? Open Salami! Personalizing Vocabulary Assessment-Intervention for Children via Pervasive Profiling and Bespoke Storybook Generation*
- Korea Computer Congress (KCC) 2023** Jun 2023  
 Oral Presentation at Top Conference Session *Jeju, Korea*
- Topic - *SleepGuru: Personalized Sleep Planing System for Real-life Actionability and Negotiability*
- Google ExploreCSR Workshop for Women in EECS** Mar 2023  
 Oral Presentation *Pohang, Korea*
- Topic - *Hyper-personalization through Principled Bespoke Generation*
- DelightRoom Co., Ltd.** Aug 2022  
 Invited Talk *Seoul, Korea*
- Topic - *Personalization of sleep schedules considering individuals' real-life constraints*
  - DelightRoom is a start-up company on sleep technology, with more than 75 million users worldwide.

## PATENTS

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[P.6]	<b>Device and Method for Extracting Words that a Child Needs to Learn by Profiling the Child's Conversation(al) Content</b> U.S. Patent Pending (Application No. 19/186640, Application Date: 23-APR-2025)	2025
[P.5]	<b>Motion Detection Device and Method Using Earth's Magnetic Field</b> U.S. Patent Pending (Application No. 18/973156, Application Date: 09-DEC-2024)	2024
[P.4]	<b>Personalized Storybook Creation System for Vocabulary Assessment and Intervention by Profiling Children's Language Environment</b> Korea Patent Pending (Application No. 10-2024-0182284)	2024
[P.3]	<b>Proximity Magnetic Sensing Using a Single Commodity Mobile for Weight Exercise Monitoring</b> Korea Patent Pending (Application No. 10-2024-0086028)	2024
[P.2]	<b>Personalized Sleep Planning System Considering Individual Dynamic Constraints and Sleep Schedule Creating Method Using Same</b> U.S. Patent Pending (Application No. 17/886446, Application Date: 11-AUG-2022)	2022
[P.1]	<b>Personalized Sleep Planning System Considering Individual Dynamic Constraints and Sleep Schedules Creation Method Therefore</b> Korea Patent Pending (Application No. 10-2022-0018999)	2022

## RESEARCH PROJECTS

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<b>Toward Affective Empathy via Personalized Analogy Generation: A Case Study on Microaggression</b> [H.8], [C.4], [A.5]	2023 - 2025
<ul style="list-style-type: none"><li>The importance of empathy cannot be overstated in modern societies where people of diverse backgrounds increasingly interact together. The HCI community has strived to foster affective empathy through immersive technologies. Many previous techniques are built upon a premise that presenting the same experience as-is may help evoke the same emotion, which however faces limitations in matters where the emotional responses largely differ across individuals. In this paper, we present a novel concept of generating a personalized experience based on a large language model (LLM) to facilitate affective empathy between individuals despite their differences. As a case study to showcase its effectiveness, we developed EmoSync, an LLM-based agent that generates personalized analogical microaggression situations, facilitating users to personally resonate with a specific microaggression situation of another person. EmoSync is designed and evaluated along a 3-phased user study with 100+ participants. We comprehensively discuss implications, limitations, and possible applications.</li></ul>	
<b>Personalizing Vocabulary Assessment-Intervention for Children via Pervasive Profiling and Bespoke Storybook Generation</b> [H.6], [H.7], [C.3], [P.4]	2023 - 2024
<ul style="list-style-type: none"><li>Children acquire language by interacting with their surroundings. Due to the different language environments each child is exposed to, the words they encounter and need in their life vary. <i>Open Sesame? Open Salami! (OSOS)</i> is a personalized vocabulary assessment and intervention system, collaboratively developed with speech-language pathologists. Melded into a child's daily life and powered by large language models (LLM), OSOS profiles the child's language environment, extracts priority words therein, and generates bespoke storybooks naturally incorporating those words. We evaluated OSOS through 4-week-long deployments to 9 families, and reported their experiences with OSOS, as well as its implications in supporting personalization outside standards.</li></ul>	
<b>Proximity Magnetic Sensing Using a Single Commodity Mobile toward Holistic Exercise Monitoring</b> [H.5], [C.2], [A.3], [P.3], [P.5]	2021 - 2023
<ul style="list-style-type: none"><li>Most exercise monitoring works with smartphones and smartwatches require the device to be in motion to detect exercises with inertial sensors. <i>ProxiFit</i> is a highly practical on-device exercise monitoring system capable of classifying and counting exercises even if the device stays still. Utilizing novel proximity sensing of natural magnetism in exercise equipment, ProxiFit brings (1) a new category of exercise not involving device motion such as lower-body machine exercise, and (2) a new off-body exercise monitoring mode where a smartphone can be conveniently viewed in front of the user during workouts. We evaluated ProxiFit on up to 10 weight machines (5 lower- and 5 upper-body) and 4 free-weight exercises, on both wearable and signage mode and verified the robustness against various conditions, e.g., user and weather variations, spatial and rotational device location deviations.</li></ul>	

**Personalized Sleep Planning System for Real-life Actionability and Negotiability** 2021 - 2022  
[H.4], [C.1], [A.2], [P.1], [P.2]

- Widely-accepted sleep guidelines advise regular bedtimes and sleep hygiene. However, there are times when we cannot follow them because of our professional and social duties. *SleepGuru* is an individually actionable sleep planning system pursuing co-existence of both healthy sleep and the user's real-life circumstances. Adopting theories on sleep physiology, *SleepGuru* provides multi-day sleep schedules that optimize the upcoming sleep pressure, by predicting the progression of the user's sleep pressure over a course of upcoming schedules and past activities sourced from one's online calendar and wearable fitness tracker. *SleepGuru* also provides alternatives and explanations of the system-generated sleep guides via mobile interfaces. We conducted 8-week in-the-wild deployment study with 20 participants, consisting of daily questionnaires, weekly interviews, and exit interview. The results show *SleepGuru*'s positive effects in sleep quality, compliance rate, and so on.

**TouchVR: A Modality for Instant VR Experience** 2021 - 2022  
[A.1]

- We envision instant and ubiquitous access to the VR worlds in the future. However, existing highly portable VR devices usually lack rich and convenient input modality. *TouchVR* is a system that enables Back-of-Device (BoD) interaction in instant VR supported by mobile HMDs. We developed prototype of the *TouchVR* system in Android platform, and implemented a sample application (360° video player) to demonstrate the usage of our system.

## EXPERIENCE

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**Research Intern** Mar 2025 –  
*NAVER AI Lab*

**Web Developer (Intern)** Jul 2018 – Jul 2019  
*Plat Corp*

- Developed and maintained *Carplat* and *Carplat Partners* websites with React, Redux, Node, and PostgreSQL. (*Carplat* is a mobility platform for door-to-door delivery car rental and enterprise community car sharing service.)
- Maintained *Carplat* Android app with Kotlin.
- Engaged in the entire software development lifecycle, adopting agile techniques.
- Actively collaborated with developers, designers, sales managers, and other teams to design and improve services.

## ACADEMIC SERVICES

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**Artifact Evaluation Reviewer** 2022  
ACM MobiSys

**Reviewer** 2024, 2025  
ACM CHI

## TEACHING EXPERIENCES

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**TA, CSED800B Computer Science Colloquium** Fall 2023  
POSTECH

**TA, CSED490D Introduction to Mobile & Ubiquitous Computing** Fall 2022  
POSTECH

**TA, CSED353 Computer Networks** Spring 2022  
POSTECH

## SKILLS

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**Programming Language** : Python, C, C++, C#, JavaScript, Java, Kotlin, MATLAB, Ocaml

**Web Development** : React, Redux, Node, Flask

**Mobile-IoT Development** : Android, Arduino

**Databases** : MySQL, PostgreSQL

**Multimedia** : Adobe Photoshop, Adobe Premier, Adobe Illustrator

**Human Language** : Korean (native), English (fluent)