# Kyungyeon Lee

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**EDUCATION**

**University of Maryland, College Park**, MD, USA                                   08/2021-Present
- Department of Computer Science

**Ewha Womans University**, Seoul, South Korea                                   03/2016 - 03/2021
- Bachelor of Science in Computer Science and Engineering
- Advisor: Dr. Uran Oh

**INTERESTS**

Human-Computer Interaction, Accessibility, Extended Reality, Human-Centered Computing

**PUBLICATIONS**

[1] Jarrett G.W. Lee, **Kyungyeon Lee**, Bongshin Lee, Soyoung Choi, JooYoung Seo, Eun Kyoung Choe. Personal Health Data Tracking by Blind and Low-Vision People: A Survey Study *Accepted, Journal of Medical Internet Research*

[2] SeungA Chung, **Kyungyeon Lee**, Uran Oh. Understanding the Two-Step Nonvisual Omnidirectional Guidance for Target Acquisition in 3D spaces. *2021 IEEE International Symposium on Mixed and Augmented Reality (ISMAR)* [pdf]

[3] **Kyungyeon Lee**\*, Sohyeon Park\*, Uran Oh. Designing Product Descriptions for Supporting Independent Grocery Shopping of People with Visual Impairments. *Extended Abstracts of the 2021 CHI Conference on Human Factors in Computing Systems* [pdf] [video]

[4] **Kyungyeon Lee**, SeungA Chung, Uran Oh. OverIT: An Interactive Overlay for Touchscreen-based UI Customization with a Programming by Demonstration. *International Journal of Advanced Smart Convergence 2021.* [pdf] [demo]

[5] Soobin Park, SeungA Chung, Sohyeon Park, **Kyungyeon Lee**, Uran Oh. Improving Mealtime Experiences of People with Visual Impairments. *Proceedings of the 18th International Web for All Conference.* **Best Technical Paper Nomination** [pdf]

[6] SeungA Chung, **Kyungyeon Lee**, Sohyeon Park, Uran Oh. Investigating Three-dimensional Directional Guidance With Nonvisual Feedback with Target Searching Task. *2021 IEEE International Conference on Pervasive Computing and Communications Workshops and other Affiliated Events (PerCom Workshops)* [pdf]

[7] SeungA Chung, **Kyungyeon Lee**, Uran Oh. Investigating Three-dimensional Directional Guidance With Nonvisual Feedback with Target Searching Task. *2020 IEEE International Symposium on Mixed and Augmented Reality Adjunct (ISMAR-Adjunct)* [pdf] [video]

[8] **Kyungyeon Lee**\*, Yeonji Kim\*, Uran Oh. Understanding Interactive and Explainable Feedback for Supporting Non-Experts with Data Preparation for Building a Deep Learning Model. *International Journal of Advanced Smart Convergence 2020.* [pdf]

**TEACHING**

**Graduate Teaching Assistant**,                                                   University of Maryland
*CMSC389N Single Page Web Application Development With JavaScript*                   Fall 2021
*CMSC335 Web Application Development with JavaScript*                               Spring 2023

**Undergraduate Teaching Assistant**,                                           Ewha Womans University
*CS11205 Computational Thinking and Problem Solving*                             03/2020 - 07/2020

**EXPERIENCES**

**Research Assistant**, *University of Maryland*                                   01/2022 - 01/2023
Supervised by Prof. Eun Kyoung Choe
- Building an annotation app for stroke patients that is a multi-modal self-tracking application [demo].
- Developed an android application for tracking stroke survivors' finger individuation task. [demo].
- Conducted a survey to understand how blind and low-vision people engage in health activities, and how they collect and use their data about their health [1].

**Research Assistant**, *Ewha HCI Lab*                                           01/2019 - 01/2021
Supervised by Prof. Uran Oh
- Participated in various projects studying the accessibility for people with visual impairment (PVI) and improving the quality of their lives using extended reality.

– Project 1: Conducted a study under 6 different feedback designs to understand the effects of various nonvisual feedback for 3D directional guidance [6], [7]. Also, presented the poster on *ISMAR 2020*.

– Project 2: Investigated the difficulties that PVI experience when shopping groceries offline such as in department stores or wholesale marts, and conceptualized/implemented the optimal assistant model with mixed reality [3].

– Project 3: Implemented a meal assistance system in a virtual environment and conducted a qualitative study to understand the eating experiences and difficulties of PVI [5].

- Developed OverIT, a programming-by-demonstration system that enables users to customize interfaces to improve the user experience of one-handed interaction with touchscreen devices [4].
- Developed a machine learning data preparation tool with interactive and explainable features and analyzed the effects of each feature on the general person's understanding of machine learning [8].

**Undergraduate Mentee**, *IBM Korea*                                            07/2018 - 01/2019

Supervised by SG Lee and Anna Choi

- Designed and implemented Achat which helps to manage users' collaboration more systematically.
- Won IBM CEO Award in Hanium contest and gave a poster presentation on Hanium 2018 [demo].
- Performed as a lead programmer: developed an Android application, real-time socket program, and Raspberry Pi-based smart system.

## EMPLOYMENT

**Research Intern**, *CyberLogitec*                                              10/2020 - 01/2021

- Constructed additional health care data to train the artificial intelligence model which diagnosis cancer.
- Conducted the preprocessing stage of extracting metadata of DICOM (Digital Imaging and Communications in Medicine).

**Software Engineer**, *Innertainmnet*                                           03/2020 - 06/2020

- Developed machine learning content recommendation service application based on user interests.
- Implemented a recommendation system using TF-IDF and word2vec.

**Co-founder, Software Engineer**, *Startup-Giljabi*                             03/2016 - 03/2017

- Conceptualized chat application for travelers who travel alone and need online guidance.
- Managed and developed a server which connected mobile users and web users in real-time.

## PROJECTS

**CS20480 Artificial Intelligence** [pdf]                                        Spring 2020

- Improved the full-text corpus of Genomics & Informatics by semi-automatically detecting and correcting PDF-to-text conversion errors and optical character recognition errors.

**CS35913 Human-Computer Interaction** [demo]                                    Fall 2019

- Conducted three types of analysis: user, task, and domain, and developed a web application for various art lovers.

**CS36510 Virtual Reality and Interaction Techniques** [demo]                    Fall 2019

- Implemented a virtual museum that can interact with 3D objects.

**CS20494 Computer Graphics** [code]                                             Fall 2018

- Designed and implemented a ray tracer using OpenGL and C++.
- Won 1st place in the final project.

## HONORS & AWARDS

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| **Graduate Fellowship**, University of Maryland | 2022 |
| **Best Technical Paper Nomination**, Web4All 2021 | 2021 |
| **Student Independent Research Competition 2nd Prize**, Information Technology Research Center | 2020 |
| **Student Research Grant**, Information Technology Research Center | 2020 |
| **Dean's List**, Ewha Womans University | 2019 |
| **Graduation Project Competition 1st Prize in Research Track**, Ewha Womans University | 2019 |
| **Future Capability Development Scholarship**, Ewha Womans University | 2019 |
| **IBM CEO Award**, IBM Korea | 2018 |
| **Finalist of Hanium Constest**, Ministry of Science and ICT | 2018 |
| **Tech Idea Hackathon Prime Pitch Day 3rd Prize**, Ewha Womans University | 2018 |
| **Academic Scholarship**, Ministry of National Defense | 2017 |

COMPETENCES **Techniques**
- Programming: Java, Android (Java, Kotlin, React Native), C/C++, Unity (C#), Python, PHP, HTML, CSS, Javascript, Typescript, SQL
- Deep Learning Framework: Tensorflow, Pytorch

SERVICE **Student Volunteer**, *ISMAR 2020, CHI 2021, HCI Korea 2021*