Kyungyeon Lee

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EDUCATION

University of Maryland, College Park, MD, USA — 08/2021-Present
- Department of Computer Science
- Advisor: Dr. Eun Kyoung Choe

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, Human-Centered Computing, Accessibility, Health Informatics, Extended Reality

PUBLICATIONS

[1] **Kyungyeon Lee**, Sohyeon Park, Uran Oh. Assistant Model Design Based on Challenges PVI Experience during Offline Grocery Shopping. *Late-Breaking Work, Conference on Human Factors in Computing Systems 2021. (Acceptance Rate: 39.0%)* [pdf]

[2] Soobin Park, SeungA Chung, Sohyeon Park, **Kyungyeon Lee**, Uran Oh. Improving Mealtime Experiences of People with Visual Impairments. *Web4All 2021. Best Technical Paper Nomination* [pdf]

[3] SeungA Chung, **Kyungyeon Lee**, Sohyeon Park, Uran Oh. Investigating Three-dimensional Directional Guidance With Nonvisual Feedback with Target Searching Task. *Workshop on Mobile and Pervasive Assistive Technologies 2021.* [pdf]

[4] SeungA Chung, **Kyungyeon Lee**, Uran Oh. Investigating Three-dimensional Directional Guidance With Nonvisual Feedback with Target Searching Task. *International Symposium on Mixed and Augmented Reality 2020 Poster.* [pdf] [demo]

[5] **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]

PREPRINTS & MANUSCRIPTS

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

[7] SeungA Chung, **Kyungyeon Lee**, Uran Oh. Understanding the Two-Step Nonvisual Omnidirectional Guideance for Target Acquisition in 3D spaces. Submitted to *International Symposium on Mixed and Augmented Reality 2021.* [pdf]

[8] Sohyeon Park*, **Kyungyeon Lee***, Uran Oh. Understanding the Effects of Physical Interaction Types and Distance on the Performance of Target Selection Task. Submitted to *International Symposium on Mixed and Augmented Reality 2021 Poster.* [pdf]

EXPERIENCES

Research Assistant, *Ewha HCI Lab* — 01/2019 - present

Supervised by Prof. Uran Oh

- 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 [1].
- 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 [6].
- 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 [2], [3]. 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 [4].
  - Project 3: Conducted a qualitative study to understand the eating experiences and difficulties of PVI [5].

Teaching Assistant, *CS11205 Computational Thinking and Problem Solving* 03/2020 - 07/2020
- Covered basic Python programming and basic algorithm.
- Ran Q&A sessions every twice a week with over 70 students and graded their assignments.

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.

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

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 by using C#, Unity, Oculus VR.

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

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

Languages korean (*native*), English (*proficient*)

Techniques
- Programming: Java, Android (Java, Kotlin), C/C++, C#, Python, PHP, HTML, CSS, Javascript, R
- Deep Learning Framework: Tensorflow, Pytorch