Jaewook (Jae) Lee

Curriculum Vitae
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Research Interests

HCI, Mobile Computing, VR/AR/MR, Context-Aware Computing, and Sensing

Education

University of Illinois at Urbana-Champaign — Urbana, IL
B.S. in Computer Science, Minor in Psychology, GPA: 3.95/4.00, Technical GPA: 3.93/4.00 — 2018–Present

- Thesis: "Pedestrian Hazard Detection Using Acoustic Augmented Reality"

Professional Experience

Carnegie Mellon HCII — Virtual
REU Research Intern, Advised by David Lindlbauer — Jun. 2021 - Present

- Researching how to create a context-aware AR navigation system with a focus on observing which AR navigation visualizations work best and which contexts do pedestrians pay attention to.

Microsoft Research — Virtual
Open Source Researcher, Advised by Eyal Ofek — May. 2021 - Present

- Leading an effort to create an open source toolkit with a goal of facilitating remote user studies for VR researchers.

University of Illinois at Urbana-Champaign — Urbana, IL
Research Assistant, Advised by Alex Kirlik, Brian Bailey, and Romit Roy Choudhury — May. 2019 - Present

- Researching how to personalize head related transfer function (HRTF) to create an acoustic augmented reality (AAR) based indoor navigation system.
- Conducting a field study using Decipher, a tool that facilitates understanding of large sets of feedback. This work is done in collaboration with *Adobe Research*.
- Researched whether touch is a good additional modality to resolving ambiguities in voice assistant queries. **[C4]**
- Researched whether a tool that visualizes data from multiple teamwork software (e.g., Google Drive, Slack, Github) can be effective in assisting peer evaluation. **[C3]**
- Researched the effects of complacency in humans as they cooperate with artificial intelligence. This work is done in collaboration with the *Army Research Lab (ARL)*. **[C1]**

University of California, Los Angeles — Virtual
Research Intern, Advised by Yang Zhang — Apr. 2021 - Sep. 2021

- Designing a novel, on-body interaction method with a goal of enhancing interactions with objects in VR.

University of Michigan — Virtual
Research Intern, Advised by Anhong Guo — Aug. 2020 - Sep. 2021

- Developing a novel, tactile interaction method for smartphones with a goal of empowering blind users to judge the accuracy of auto-generated captions. **[P2]**

Carnegie Mellon HCII — Virtual
REU Research Intern, Advised by Vincent Aleven — Jun. 2020 - Nov. 2020

– Researched whether mid-fi prototyping (which we call Virtual Prototyping Method, or VPM for short) can be an effective strategy in remotely co-designing spatial displays (i.e. Hololens). **[C2]**

Health Care Engineering Systems Center Urbana, IL
R&D Intern, Advised by Thenkurussi (Kesh) Kesavadas Sep. 2019 - Sep. 2020

– Worked on building various medical VR simulations, including *Intubation* (process of inserting an endotracheal tube through the mouth and then into the airway), *Spay* (removal of an animal's reproductive organ), *ECMO* (a device that pumps and oxygenates a patient's blood, allowing the heart and lungs to rest), and *Managing Depression* (of those who are terminally ill).

AARP Urbana, IL
R&D Intern May 2019 - Dec. 2019

– Led a team of 3 to build a virtual reality learning platform with the goal of educating senior citizens more about brain-stimulating activities through 360 recordings of professionals (e.g., chefs and gardeners).

Zoho Corporation Pleasanton, CA
Software Engineering Intern May 2018 - Jul. 2018

– Created an integration for Zoho CRM that syncs data in real-time between Zoho CRM and Groove. Currently deployed on Zoho's marketplace: https://marketplace.zoho.com/app/crm/groove-integration-for-zoho-crm

Peer-Reviewed Publications (*Equal Contribution)

S.3 In Submission Third Author Paper at CHI 2022

S.2 In Submission First Author Paper at CHI 2022

S.1 In Submission Third Author Paper at CSCW 2022

C.4 **J. Lee**, S. Rodriguez, R. Natarrajan, J. Chen, H. Deep, and A. Kirlik, "What's This? A Voice and Touch Multimodal Approach for Ambiguity Resolution in Voice Assistants", *To Appear at ICMI 2021*

P.2 **J. Lee**, Y. Peng, J. Herskovitz, and A. Guo, "Image Explorer: Multi-Layered Touch Exploration to Make Images Accessible", *To Appear at ASSETS 2021*

C.3 W. Shi, A. Jagannadharao, **J. Lee**, and B. Bailey, "Challenges and Opportunities for Data-Centric Peer Evaluation Tools for Teamwork", *To Appear at CSCW 2021*

C.2 J. Jang*, **J. Lee***, V. Echeverria, L. Lawrence, and V. Aleven, "Explorations of Designing Spatial Classroom Analytics with Virtual Prototyping", *Learning Analytics and Knowledge Conference (LAK 21), Apr. 2021. https://dl.acm.org/doi/10.1145/3448139.3448192*

P.1 T. Kim, **J. Lee**, R. Lindgren, and J. Kang, "Developing Virtual Reality Data Kit for Education Researchers", *Learning Sciences Graduate Student Conference (LSGSC 2020)*, Nov. 2020.

C.1 S. Rodriguez, J. Chen*, H. Deep*, **J. Lee***, D. Asher, and E. Zaroukian, "Measuring Complacency in Humans Interacting with Autonomous Agents in a Multi-Agent System", *Society of Photo-Optical Instrumentation Engineers (SPIE) Defense + Commercial Sensing Proceedings*, Apr. 2020. https://doi.org/10.1117/12.2559474

Awards And Honors

- **Bridge to VR Scholarship** - IEEE VR Conference 2021
- **3rd Place, Voice Capabilities and AI Category** - Illinois Datathon 2021

- **Undergraduate Research Grant ($1000)** - ISUR 2020
- **Runner-Up Masterpiece** - VandyHacks VI 2019
- **Best Use of Facebook API (Used Oculus Integration)** - HackIllinois 2019
- **3rd Place, Most Entertaining Category** - Engineering Open House 2019
- **James Scholar** - FA19, SP20, FA20, SP21, FA21 2019 - 2021
- **Best Presentation** - PURE Research Symposium 2018
- **Dean's List** - FA18, SP19, FA19, SP20, FA20, SP21 2018 - 2021

Teaching And Mentoring

- **Mentor** at ACM SIGCHI, UIUC Chapter Sep. 2021 - Present
  Giving talks and providing mentorship to undergraduate students who are interested in HCI.
- **Course Creator & Instructor** at Codable Sep. 2021 - Present
  Introduction to AR and VR
- **Course Creator & Instructor** at the Center for Innovation, Teaching, and Learning Aug. 2020 - May 2021
  Introduction to XR development using Unity

Paper Reviewing

- **ACM ICMI** 2021

Invited Talks And Presentations

- **Undergraduate Research Seminar** - How to Participate in Research as an Undergraduate 2020
- **Engineering Research Fair** - Applications of Augmented Reality in Research 2020
- **Engineering Research Fair** - Applications of Virtual Reality in Research 2019
- **PURE Research Symposium** - Performance Analysis of K-Means and Spectral Clustering 2018

Selected Press Coverage

- UIUC Creates ECMO Training Simulator through Interdisciplinary Collaboration 2020