Seraphina Yong

Website: seraphina-yong.github.io

Email: yong0021@umn.edu

Phone: +1-626-696-6841

Address: 200 Union St SE, 4-192 Keller Hall, Minneapolis, MN 55455.

RESEARCH STATEMENT

I am interested in designing tools to support thoughtful social interactions and healthy interpersonal relationships, in a fast-paced era where we are losing the space to reflect on our social experiences, achieve mutual understanding, and maintain valuable relationships. Within HCI, my research integrates principles of human perception, activity theory, and the multimodal and spatiotemporal characteristics of technology to understand, build, and evaluate systems that naturally facilitate conscious reflection upon social interactions. This can enhance people's ability to actively engage in challenging but relationally-productive behaviors, such as becoming closer, addressing conflicts, or resolving misunderstandings. I design transformative social experiences that benefit emotional well-being using both emerging and established technologies, and mixed- and qualitative research methods.

EDUCATION

Ph.D. Candidate, Department of Computer Science,
University of Minnesota (Minneapolis, MN) — 2021- current
Lab: GroupLens Research & Illusioneering Lab
Advisors: Lana Yarosh, Evan Suma Rosenberg

M.S., Department of Computer Science,
National Tsing Hua University (Hsinchu, Taiwan) — 2017-2019

B.S., Department of Computer Science,
University of Chicago (Chicago, IL) — 2012-2016

WORK EXPERIENCE

GroupLens Lab and Illusioneering Lab,
University of Minnesota, MN 2021-
Graduate Research Assistant
Primary Investigators: Lana Yarosh, Evan Suma Rosenberg
Projects: Designing virtual and interoceptive systems to support the development of behavioral skills for interpersonal relationship management via embodied learning of others' experiences; Developing a sociotechnical model of the process of online relationship development

OMRON SINIC X and The University of Tokyo,
Tokyo, Japan 2024.05-2024.08
Research Intern
Primary Investigators: Shigeo Yoshida, Chi-Lan Yang, Atsushi Hashimoto, Hideaki Kuzuoka
Projects: Designing and evaluating linguistically stylized AI-generated conversation digests in the form of poems to support management of communication failures in cross-cultural friendships

NTU IoX Center Research Institute,
National Taiwan University, Taiwan 2019-2021
Research Assistant
Primary Investigator: Robin Bing-Yu Chen
Projects: Enhancing recall of social emotional memory with thermal-augmented media; Developing collaborative health management methods for depressed older adults

Media and Interactives, Department of Exhibits,
Field Museum of Natural History, IL 2016-2017
Digital Interactives Producer
Projects: Designing, building, evaluating tangible interfaces for education on science topics

PUBLICATIONS

Refereed Conference Full Papers

Seraphina Yong, Leo Cui, Evan Suma Rosenberg, Svetlana Yarosh. A Change of Scenery: Transformative Insights from Retrospective VR Embodied Perspective-Taking of Conflict with a Close Other. *In Proceedings of the ACM Conference on Human Factors in Computing Systems* (CHI 2024)

Seraphina Yong, Min-Wei Hung, Chien-Wen Yuan, Chih-Chiang Chiu, Ming-Chyi Huang, Chuang-Wen You. Mind and Body: The Complex Role of Social Resources in Understanding and Managing Depression in Older Adults. *In Proceedings of the ACM Conference on Computer Supported Cooperative Work* (CSCW 2023)

Ruei-Che Chang*, Seraphina Yong*, Fang-Ying Liao, Chih-An Tsao, Bing-Yu Chen. Understanding (Non-)Visual Needs for the Design of Laser-Cut Models. *In Proceedings of the ACM Conference on Human Factors in Computing Systems* (CHI 2023)
**Both authors contributed equally to this work.*

Jerald Thomas Jr., Seraphina Yong, Evan Suma Rosenberg. Inverse Kinematics Assistance for the Creation of Redirected Walking Paths. *In Proceedings of the IEEE/ACM Symposium on Mixed and Augmented Reality* (ISMAR 2022)

Ruei-Che Chang, Chih-An Tsao, Fang-Ying Liao, Seraphina Yong, Tom Yeh, and Bing-Yu Chen. Daedalus in the Dark: Designing for Non-Visual Accessible Construction of Laser-Cut Architecture. *In Proceedings of the ACM Symposium on User Interface Software & Technology* (UIST 2021)

Chiu-Hsuan Wang, Seraphina Yong, Hsin-Yu Chen, Yuan-Syun Ye, Liwei Chan.
HMD Light: Sharing In-VR Experience via Head-Mounted Projector for Asymmetric Interaction.
In Proceedings of the ACM Symposium on User Interface Software & Technology (UIST 2020)

Chiu-Hsuan Wang, Chia-En Tsai, Seraphina Yong, Liwei Chan. Slice of Light : Transparent and Integrative Transition Among Realities in a Multi-HMD User Environment. *In Proceedings of the ACM Symposium on User Interface Software & Technology* (UIST 2020)

Workshops and Posters

Seraphina Yong. Designing Agency-Preserving Reflection Systems to Support Reappraisal of Social Biases. *In Proceedings of the ACM Conference on Computer Supported Cooperative Work and Social Computing Companion* (CSCW 2023)

Seraphina Yong, Min-Wei Hung, Chien Wen (Tina) Yuan, Chih-Chiang Chiu, Ming-Chyi Huang, Chuang-Wen You. Attitudes Toward Health and Communication in Depressed Older Adults. *In Proceedings of the ACM Conference on Computer Supported Cooperative Work and Social Computing Companion* (CSCW 2020)

Seraphina Yong, Yuan-Chi Tseng, Hao-Chuan Wang. AuralTrace: Pitch-Based Sonified Referencing to Support Reception of Virtual Spatial Communication. *Taiwan Computer Human Interaction Conference* (TAICHI 2019)
[Best Paper Award]

Seraphina Yong, Hao-Chuan Wang. Using Spatialized Audio to Improve Human Spatial Knowledge Acquisition in Virtual Reality. *In Proceedings of the 23rd International Conference on Intelligent User Interfaces Companion* (IUI 2018)

Chen-Wei Huang, Pornlada Ittipornpithak, Ko-Ren Chang, Seraphina Yong.
NBrain: Customizable Messaging Support for Cross-Lingual Brainstorming. *Taiwan Computer Human Interaction Workshop Demo* (TAICHI 2016)

Kuan-Yu Lin, Seraphina Yong, Shuo-Ping Wang, Chien-Tung Lai, Hao-Chuan Wang.
HandVis: Visualized Gesture Support for Remote Cross-Lingual Communication. *In Proceedings of ACM Conference on Human Factors in Computing Systems, Extended Abstract* (CHI 2016)

PROJECTS

Improving Other-Oriented Understanding and Communication Through Virtually-Embodied Experience Swapping, 2021—current
Current VR systems and interoceptive technologies enhance feelings of empathy for others and self-regulation. Our work on VR other-embodiment in a situated context demonstrated that such experiences can also stimulate higher-order cognitive functions such as qualitative learning of others' perspectives and communication change. We follow by developing an instrument to measure finer-grained social behavioral impacts of virtual embodiment experiences and design interoceptive displays to synchronize the internal emotional experience of the target and user.

Understanding Non-Visual Needs for Laser-Cut Architecture Design,
April 2021— September 2021
Laser-cutting is a convenient and promising prototyping method, but laser-cut models include an extra step of assembly which is a barrier to blind and visually-impaired (BVI) users. We conduct a mixed-methods study with both sighted and BVI users to compare their use of laser-cut model affordances and provide implications to support general sensory accessibility in laser-cut design.

Designing Collaborative Health for Depressed Older Adults, 2020-2021
Depressed older adults struggle with a confusing interplay of mental and bodily symptoms that hinder treatment. Practitioners have identified a need for collaborative health communication to support treatment. We conducted an in-depth interview to identify depressed older adults' perceptions of their own bodily health and communication in order to derive targeted implications for designing collaborative technology to support recovery.

Sonification of Dynamic References for Remote Space-Aware Collaboration, 2017-2020
The use of relational spatial knowledge in virtual spaces is relevant to many applications (e.g. e-sports team strategizing and interior design), but multimodal feedback channels may be necessary to compensate for low fidelity visual-spatial cues in the virtual world. We explore sonification-focused multimodal tools as support for understanding in synchronous relational spatial communication.

RESEARCH INTERESTS

Human-Computer Interaction
Social Reflection, Behavior Change, and Well-Being
Embodied Computing and Multimodal Interaction
Perception and Cognition

AWARDS AND GRANTS

Empathy and Theory of Mind in Virtual Reality: Advancing Methods and Systems
National Science Foundation (NSF) Small Grant | Human-Centered Computing (HCC)
Role: Lead Author under PI Lana Yarosh
Amount requested: $600,000
Status: Submitted, May 2024

ARCS and 3M Scholar 2022-2024

Three-Year Graduate Fellowship, College of Science and Engineering
University of Minnesota 2021-2024

TAICHI 2019 Best Paper Award (AuralTrace: Pitch-Based Sonified Referencing to Support Reception of Virtual Spatial Communication**)**

International Student Scholarship, National Tsing Hua University 2017-2018

Dean's List, University of Chicago 2012-2016

OTHER EXPERIENCE

Blog writer for ACM UIST on Medium (read it here)

ACM CHI reviewer 2020, 2021, 2022, 2023, 2024

ACM CSCW reviewer 2020, 2021, 2022, 2023, 2024

IEEE VR reviewer 2024

CSCW Asia Winter School 2020
Attendee and presenter

CSCW Asia Winter School 2019
Attendee and presenter

PROFESSIONAL SKILLS

Programming: Python | C# | C++ | R | JavaScript | HTML&CSS

Software: Blender | Git | Unity | HTC Vive | Oculus | SteamVR | OpenVR | JMP | SPSS

Languages: English (Native), Mandarin Chinese (Fluent)