Shwetha Rajaram

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shwetharajaram.github.io

University of Michigan, Ann Arbor
School of Information

Overview

My research explores how to enable non-technical users to create AR/VR experiences while guiding them towards safer and more privacy-friendly design. To do this, I develop and evaluate AR/VR authoring tools and design methods that educate users about potential safety, security & privacy harms and equip them with tools to mitigate these issues.

Research interests: human-computer interaction (HCI), augmented & virtual reality (AR/VR), creativity support tools, privacy & security

Education

University of Michigan, Ann Arbor — SEPT 2020 - present
Ph.D. in Information
Advisor: Prof. Michael Nebeling

University of Michigan, Ann Arbor — SEPT 2015 - MAY 2019
B.S.E. in Computer Science & Engineering

Publications

Peer-Reviewed Full Papers

Shwetha Rajaram, Chen Chen, Franziska Roesner, Michael Nebeling. ***Eliciting Security & Privacy-Informed Sharing Techniques for Multi-User Augmented Reality.*** — To appear in CHI 2023

Shwetha Rajaram, Michael Nebeling. ***Paper Trail: An Immersive Authoring System for Augmented Reality Instructional Experiences.*** — CHI 2022

Michael Nebeling, Shwetha Rajaram, Liwei Wu, Yifei Cheng, Jaylin Herskovitz. CHI 2021
XRStudio: A Virtual Production and Live Streaming System for Immersive Instructional Experiences.

Michael Nebeling, Maximillian Speicher, Xizi Wang, Shwetha Rajaram, Brian D. Hall, Zijian Xie, Alexander R. E. Raistrick, Michelle Aebersold, Edward G. Happ, Jiayin Wang, Yanan Sun, Lotus Zhang, Leah E. Ramsier, Rhea Kulkarni. CHI 2020
MRAT: The Mixed Reality Analytics Toolkit. Best Paper Award

Workshop Papers

Shwetha Rajaram, Michael Nebeling. *Extending AR Authoring Tools with Built-in Support for Privacy and Security Analysis.* SSPXR @ CHI 2022

Shwetha Rajaram, Franziska Roesner, Michael Nebeling. *Designing Privacy-Informed Sharing Techniques for Multi-User Augmented Reality.* VR4Sec @ SOUPS 2021

Teaching Experience

University of Michigan, Ann Arbor

Graduate Student Instructor, SI 659: Developing AR/VR Experiences — JAN 2022 - APR - 2022

Graduate Student Instructor, SI 559: Introduction to AR/VR Application Design — SEPT - DEC 2021

Instructional Aide, EECS 493: User Interface Development — JAN 2019 - MAY 2019

Professional Experience

JP Morgan Chase, Jersey City, NJ — JAN - DEC 2018
Software Engineering Intern

John Deere, Moline, IL — MAY - AUG 2017
Information Technology Intern

Awards

CHI 2020 Best Paper Award — MAY 2020

Society of Women Engineers Outstanding Collegiate Member — OCT 2019

MLK Spirit Award, UM College of Engineering — JAN 2019

Service

Assistant to Program Chairs

UIST 2021

Reviewing

ACM Conference on Human Factors in Computing Systems **(CHI)** — 2021-2023
Full Papers & Late-Breaking Work

IEEE International Symposium on Mixed and Augmented Reality **(ISMAR)** — 2021

Leadership & Outreach

Washtenaw Elementary Science Olympiad (WESO) — SEP 2011 - present
Event Supervisor

Society of Women Engineers (SWE) at UMich — APR 2016 - APR 2019
President, Executive Board
Secretary, Executive Board
Summer Engineering Exploration Camp Director
Elementary Outreach Officer

Women+ Excelling More in Mathematics, Engineering and Science (F.E.M.M.E.S.) — APR 2016 - present
Website Developer
Grants Manager
Capstone Activities Coordinator

Academic Mentoring

Macarena Peralta, University of Michigan Computer Science — NOV 2022 – present
(Undergraduate)

Jihee Yoon, University of Michigan School of Information *(Masters)* — JAN 2022 - APR 2022

Chen Chen, University of Michigan School of Information *(Masters)* JUNE 2021 - APR 2022

Sereen Kallerackal, University of Michigan School of Information *(Masters)* FEB - APR 2021

Maya Subramanian, University of Michigan Computer Science *(Undergraduate)* JAN - MAR 2021

I Hun Chan, University of Michigan Computer Science *(Undergraduate)* JAN - MAR 2021

Skills

Research Methods: HCI systems research, mixed-methods user studies, user-driven elicitation, interviews, focus groups

Programming Languages: C#, HTML/Javascript, C++, Python

AR/VR Technologies
SDKs: Unity Engine (ARFoundation, Vuforia, MRTK) and A-Frame
Devices: mobile AR, HoloLens 1/2, Oculus Rift, Windows Mixed Reality headsets

Coursework

Ph.D. Courses

Privacy in Information Technology, Human-Computer Interaction, Research Methods, Human-AI Interaction, Algorithms & Societal Implications, Introduction to Statistics and Data Analysis, Doctoral Foundation Seminar *(Information Science Theory)*, Educational Technology Design

Masters in Information Courses

Developing AR/VR Experiences, Engineering Interactive Systems, Contextual Inquiry, Graphic Design, Fundamentals of Human Behavior, Game Development Research, Independent Study (AR/VR)

Selected Undergraduate Courses

Game Development, User Interface Development, Web Systems, Intro to Computer Security, Intro to Machine Learning, Data Structures and Algorithms, Intro to Computer Organization, Computer Science Theory, Interaction Design, Drawing