

Emily Kuang

PHD STUDENT IN HCI · UX RESEARCHER · GOOGLE PHD FELLOW

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*At the forefront of **Human-Computer Interaction (HCI)**, **Artificial Intelligence (AI)**, and **User Experience (UX)**, my research focuses on designing and evaluating human-AI collaborative tools for improved usability and UX analysis. Honored with the 2023 **Google PhD Fellowship in HCI**, my work not only advances technology but also champions accessibility, focusing on inclusive computing education and assistive technology for diverse user groups.*

Education

Rochester Institute of Technology

PHD IN COMPUTING AND INFORMATION SCIENCES

Rochester, NY, US

Aug 2020 - present

- Advised by Dr. Kristen Shinohara and Dr. Mingming Fan
- Participating in the AWARE-AI NSF Research Traineeship (NRT) Program

University of Waterloo

BASc IN BIOMEDICAL ENGINEERING

Waterloo, ON, CA

Sept 2015 - Apr 2020

- Capstone advised by Dr. John Zelek
- Graduated on Dean's Honour List

Experience

Rochester Institute of Technology

GRADUATE RESEARCH ASSISTANT

Rochester, NY, US

Aug 2020 - present

- Conduct HCI research on the human-centered design of AI-powered technologies, focusing on visual analytic tools and conversational assistants to support usability analysis
- Design, conduct, and analyze research studies employing a variety of methods including interviews, surveys, design probes, usability studies, and quantitative experiments
- Author technical papers for publication and develop dissemination plans

Autodesk, HCI & Visualization Research Group

RESEARCH INTERN

Toronto, ON, CA

May 2024 - present

- Working on projects at the intersection of generative AI and 3D design

Meta, Reality Labs

UX RESEARCH INTERN

Seattle, WA, US

May 2023 - Aug 2023

- Designed and led a 20-participant interview study about using VR headsets, efficiently collaborating with research vendors
- Actively contributed to project brainstorming workshops and internal product demos
- Effectively communicated findings to diverse product stakeholders, promoting a comprehensive understanding of user perspectives and needs

Meta, Reality Labs

UX RESEARCH INTERN

Burlingame, CA, US

May 2022 - Aug 2022

- Conducted literature reviews and authored reports to inform the design of Ray-ban | Meta smartglasses
- Designed and conducted a user study with 30 participants to investigate audio performance
- Presented results to >100 product stakeholders including researchers, engineers, and cross-functional partners; recommendations led to changes in product design

Uncharted Software Inc., ASKE-E Team

Toronto, ON, CA

RESEARCH INTERN

May 2021 - Aug 2021

- Worked on the DARPA Automating Scientific Knowledge Extraction (ASKE) program
- Designed wireframes and implemented new features in the human-machine interface (HMI) of a visual analytics system for multi-scale graph analysis and knowledge discovery

Huawei Technologies Canada, Human-Machine Interaction (HMI) Lab

Markham, ON, CA

RESEARCH ENGINEER

Jan - Aug 2019, May - Aug 2020

- Trained machine learning models for gesture recognition using Tensorflow
- Designed and conducted user experiments to explore novel interaction techniques on large screens using mid-air gesture input; contributed to the Huawei Developer Conference 2019

University of Waterloo, Vision and Image Processing (VIP) Lab

Waterloo, ON, CA

RESEARCH ASSISTANT

May 2016 - Apr 2018

- Designed and 3D-printed a lens-free microscope and a smartphone spectrometer
- Conducted testing with biological specimens to achieve optical resolution in the nm range

Publications

CONFERENCE PAPERS (PEER-REVIEWED)

- [C.13] **Bridging the Literacy Gap for Adults: Understanding How Streamers Teach Adult Literacy on Livestreaming Platforms**

SHIHAN FU, JIANHAO CHEN, [EMILY KUANG](#), MINGMING FAN

Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems [Acceptance rate: 26.3%], 2024

DOI: 10.1145/3613904.3642423

- [C.12] **Designing Unobtrusive Modulated Electrotactile Feedback on Fingertip Edge to Assist Blind and Low Vision (BLV) People in Comprehending Charts**

CHUTIAN JIANG, YINAN FAN, JUNAN XIE, [EMILY KUANG](#), KAIHAO ZHANG, MINGMING FAN

Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems [Acceptance rate: 26.3%], 2024

DOI: 10.1145/3613904.3642546 (First two authors contributed equally) Best Paper Honorable Mention (Top 5%)

- [C.11] **Exploring the Opportunity of Augmented Reality (AR) in Supporting Older Adults Explore and Learn Smartphone Applications**

XIAOFU JIN, WAI TONG, XIAOYING WEI, XIAN WANG, [EMILY KUANG](#), XIAOYU MO, HUAMIN QU, MINGMING FAN

Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems [Acceptance rate: 26.3%], 2024

DOI: 10.1145/3613904.3641901

- [C.10] **Mapping Accessibility Assignments into Core Computer Science Topics: An Empirical Study with Interviews and Surveys of Instructors and Students**

[EMILY KUANG](#), SELAH BELLSCHIEDT, DI PHAM, KRISTEN SHINOHARA, CATHERINE M. BAKER, YASMINE N. ELGLALY

Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems [Acceptance rate: 26.3%], 2024

DOI: 10.1145/3613904.3642097

- [C.9] **Enhancing UX Evaluation Through Collaboration with Conversational AI Assistants: Effects of Proactive Dialogue and Timing**

[EMILY KUANG](#), MINGHAO LI, MINGMING FAN, KRISTEN SHINOHARA

Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems [Acceptance rate: 26.3%], 2024

DOI: 10.1145/3613904.3642168

- [C.8] **Exploring the Impact of Artificial Intelligence-Generated Content (AIGC) Tools on Social Dynamics in UX Collaboration**

ZIYAN WANG, LUYAO SHEN, [EMILY KUANG](#), SHUMENG ZHANG, MINGMING FAN

Proceedings of the 2024 ACM Conference on Designing Interactive Systems [Acceptance rate: 27.4%], 2024 (To appear)

- [C.7] **Understanding Strategies and Challenges of Conducting Daily Data Analysis (DDA) Among Blind and Low-vision People**

CHUTIAN JIANG, WENTAO LEI, [EMILY KUANG](#), TENG HAN, MINGMING FAN

Proceedings of the 25th ACM SIGACCESS Conference on Computers and Accessibility [Acceptance rate: 30.2%], 2023
DOI: 10.1145/3597638.3608423

- [C.6] **Enhancing Older Adults' Gesture Typing Experience Using the T9 Keyboard on Small Touchscreen Devices**
[EMILY KUANG](#), RUIHUAN CHEN, MINGMING FAN
Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems [Acceptance rate: 27.6%], 2023
DOI: 10.1145/3544548.3581105
- [C.5] **Collaboration with Conversational AI Assistants for UX Evaluation: Questions and How to Ask them (Voice vs. Text)**
[EMILY KUANG](#), EHSAN JAHANGIRZADEH SOURE, MINGMING FAN, JIAN ZHAO, KRISTEN SHINOHARA
Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems [Acceptance rate: 27.6%], 2023
DOI: 10.1145/3544548.3581247
- [C.4] **Bridging the Generational Gap: Exploring How Virtual Reality Supports Remote Communication Between Grandparents and Grandchildren**
XIAOYING WEI, YIZHENG GU, [EMILY KUANG](#), XIAN WANG, BEIYAN CAO, XIAOFU JIN, MINGMING FAN
Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems [Acceptance rate: 27.6%], 2023
DOI: 10.1145/3544548.3581405
- [C.3] **"Merging Results Is No Easy Task": An International Survey Study of Collaborative Data Analysis Practices Among UX Practitioners**
[EMILY KUANG](#), XIAOFU JIN, MINGMING FAN
Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems [Acceptance rate: 24.7%], 2022
DOI: 10.1145/3491102.3517647
- [C.2] **"Too old to bank digitally?": A Survey of Banking Practices and Challenges Among Older Adults in China**
XIAOFU JIN, [EMILY KUANG](#), MINGMING FAN
Proceedings of the 2021 ACM Designing Interactive Systems Conference [Acceptance rate: 27.7%], 2021
DOI: 10.1145/3461778.3462127
- [C.1] **Compensated lens-free light field spectroscopy**
AMENEH BOROOMAND, MOHAMMAD SHAFIEE, LINDA WAND, [EMILY KUANG](#), FARNOUD KAZEMZADEH, ALEXANDER WONG
International Conference on Inverse Problems in Engineering, 2017

JOURNAL ARTICLES (PEER-REVIEWED)

- [J.3] **CoUX: Collaborative Visual Analysis of Think-Aloud Usability Test Videos for Digital Interfaces**
EHSAN JAHANGIRZADEH SOURE, [EMILY KUANG](#), MINGMING FAN, JIAN ZHAO
IEEE Transactions on Visualization and Computer Graphics 28.1 (2022) pp. 643–653. 2022
DOI: 10.1109/TVCG.2021.3114822 (First two authors contributed equally)
- [J.2] **Compact, Field-Portable Lens-free Microscope using Superresolution Spatio-Spectral Light-field Fusion**
FARNOUD KAZEMZADEH, [EMILY KUANG](#), ALEXANDER WONG
Journal of Computational Vision and Imaging Systems 2.1 (2016). 2016
DOI: 10.15353/vsnl.v2i1.105
- [J.1] **Enhanced Smartphone Spectroscopy via High-throughput Computational Slit**
[EMILY KUANG](#), FARNOUD KAZEMZADEH, ALEXANDER WONG
Journal of Computational Vision and Imaging Systems 2.1 (2016). 2016
DOI: 10.15353/vsnl.v2i1.97

EXTENDED ABSTRACTS & WORKSHOP PAPERS (PEER-REVIEWED)

- [P.2] **Crafting Human-AI Collaborative Analysis for User Experience Evaluation**
[EMILY KUANG](#)
In Extended Abstracts of the 2023 CHI Conference on Human Factors in Computing Systems, 2023
DOI: 10.1145/3544549.3577042 (Accepted to the Doctoral Consortium)
- [P.1] **A Multi-scale Visual Analytics Approach for Exploring Biomedical Knowledge**

FAHD HUSAIN, ROSA ROMERO-GÓMEZ, [EMILY KUANG](#), DARIO SEGURA, ADAM CAROLLI, LAI CHUNG LIU, MANFRED CHEUNG, YOHANN PARIS

Proceedings of the Workshop on Visual Analytics in Healthcare (VAHC), 2021

DOI: 10.1109/VAHC53616.2021.00010 [Best Paper Award](#)

Honors and Awards

RECEIVED DURING PHD

- 2024 **Best Paper Honorable Mention Award (Top 5%),** CHI 2024
- 2024 **Outstanding Graduate Student Award,** RIT
- 2023 **Google Ph.D. Fellowship in Human-Computer Interaction,** Google
- 2022 **AWARE-AI NRT Seed Funding Award,** RIT
- 2022 **Department Nomination for Microsoft Research Ph.D. Fellowship,** RIT
- 2021 **Best Paper Award,** Workshop on Visual Analytics in Healthcare (VAHC)
- 2020 **Merit-based Ph.D. Scholarship,** RIT

RECEIVED DURING UNDERGRADUATE

- 2018 **Experience Award,** Natural Sciences and Engineering Research Council of Canada
- 2018 **President's Research Award,** University of Waterloo
- 2017 **President's Research Award,** University of Waterloo
- 2016 **Undergraduate Student Research Award,** NSERC
- 2015 **President's Scholarship of Distinction,** University of Waterloo

Invited Talks and Poster Presentations

- Jun 2024 **Invited speaker,** Womxn in STEM Conference [Toronto, ON](#)
- Apr 2024 **Presenter,** RIT Graduate Showcase [Rochester, NY](#)
- Jan 2024 **Invited panelist,** AWARE-AI NRT Retreat: Session on Resume Building & Internships [Remote](#)
- Nov 2023 **Invited speaker,** Youth Professional Career Development Series [Remote](#)
- Apr 2023 **Poster presenter,** CHI Doctoral Consortium [Hamburg, Germany](#)
- Oct 2022 **Poster presenter,** RIT Artificial Intelligence Summit [Rochester, NY](#)
- Apr 2022 **Poster presenter,** CRA-WP Grad Cohort for Women [New Orleans, LA](#)

Teaching Experience

ISTE-798 Future Interactions

[RIT](#)

TEACHING ASSISTANT

[Jan 2024 - May 2024](#)

- Collaborate with the course instructor to plan and organize course materials
- Mentor students and provide constructive feedback on assignments, projects, and research

GUEST LECTURES

- Sept 2023 **Human-AI Collaboration for UX Evaluation,** PhD Research Colloquium (CISC896) [RIT](#)
- Apr 2023 **Older Adults' Gesture Typing Experience,** Design For Accessibility (ISTE266) [RIT](#)
- Nov 2021 **Visual Analysis of Think-Aloud Usability Test Videos,** Visual Analytics (ISTE782) [RIT](#)

Service

SERVICE TO THE PROFESSION

2024	Reviewer: Technical Papers , UIST 2024	<i>Special Recognition</i>
2024	Reviewer: Technical Papers , VIS 2024	
2023	Associate Chair , Chinese CHI 2023	
2023	Reviewer: Technical Papers , CHI 2024	<i>Special Recognition</i>
2023	Reviewer: Technical Papers , CSCW 2023	
2023	Reviewer: Technical Papers , Frontiers in Computer Science	
2022	Reviewer: Technical Papers , CHI 2023	<i>Special Recognition</i>
2022	Student Volunteer (In-person) , CHI 2022	
2021	Reviewer: Technical Papers , CHI 2022	
2021	Student Volunteer (Virtual) , VIS 2021	
2021	Reviewer: Late Breaking Work , Chinese CHI 2021	

SERVICE TO THE UNIVERSITY

2023	PhD Student Representative , Board of Trustees Meeting
2023	PhD Student Representative , GRAD Open House
2023	Trainee Council Representative , AWARE-AI NSF Research Traineeship (2022-2023)
2022	Project Judge , Genius Olympiad

Additional Professional Experience

North Inc. (now acquired by Google)

Kitchener, ON, CA

COMPUTER VISION DEVELOPER

Apr 2018 - Aug 2018

- Designed algorithm to quantify image sharpness for multi-camera system assembly

Synaptive Medical Inc.

Toronto, ON, CA

OPTICS ENGINEERING INTERN

Sept 2017- Dec 2017

- Investigated the stabilization of stereoscopic videos for a neurosurgical robot

St. Michael's Hospital

Toronto, ON, CA

MEDICAL IMAGING RESEARCH ASSISTANT

Jan 2017 - Apr 2017

- Worked on a video processing pipeline for non-invasive detection of diabetic foot ulcers

Media Coverage

10/16/2023	Two RIT students earn Google Ph.D. Fellowships for AI computing research,	<i>RIT News</i>
10/13/2023	Google PhD Fellowship recipients,	<i>Google Research</i>
09/30/2023	AWARE-AI NSF Research Traineeship Program Newsletter (Trainee Spotlight),	<i>AWARE-AI NRT</i>