

I am a **Human-Computer Interaction (HCI)** researcher, who designs and evaluates human-AI collaborative tools that enhance usability analysis. I also lead and collaborate on accessibility projects that promote inclusive computing education and develop assistive technologies for diverse users. As one of only eight HCI **Google PhD Fellows** in 2023, I demonstrate the global impact of my research and my ability to secure highly competitive funding.

## Academic Employment \_\_\_\_\_

York University Toronto, ON, CA

ASSISTANT PROFESSOR Starting July 2025

• Department of Electrical Engineering and Computer Science, Lassonde School of Engineering

## Education \_\_\_\_\_

### **Rochester Institute of Technology**

Rochester, NY, US

PHD IN COMPUTING AND INFORMATION SCIENCES

Aug 2020 - May 2025

- Thesis Title: Crafting Human-AI Collaborative Analysis for Usability Evaluations
- Committee: Kristen Shinohara (advisor), Mingming Fan (co-advisor), Cecilia Alm, Garreth Tigwell, and Jian Zhao
- Received RIT's inaugural Outstanding Graduate Student Award

## **University of Waterloo**

Waterloo, ON, CA

BASC IN BIOMEDICAL ENGINEERING

Sept 2015 - Apr 2020

- Capstone Topic: Design and Development of a Behavior Tracking and Trigger Analysis Tool for People with Dementia
- Graduated with Dean's Honour List recognition, having completed six internships

## Research Experience

#### **Rochester Institute of Technology**

Rochester, NY, US

**GRADUATE RESEARCH ASSISTANT** 

Aug 2020 - present

- · Conduct research in HCI, AI, and accessibility, focusing on human-AI collaborative tools that improve usability analysis
- Design and implement research prototypes, evaluating them through user-centered methods, including interviews, surveys, usability tests, and quantitative experiments
- Author technical papers and deliver presentations to disseminate research insights effectively
- · Mentor and coordinate research assistants and students, overseeing their contributions across various projects

## **Autodesk, HCI & Visualization Research Group**

Toronto, ON, CA

RESEARCH INTERN

May 2024 - Sept 2024

- · Led a mixed-methods research project on integrating generative AI into 3D computer-aided design
- Authored a paper detailing novel findings (currently under review), influencing cross-team research initiatives
- Delivered high-impact presentations, including a direct presentation to the CEO and VP of Research at Autodesk, effectively communicating key research insights

Meta, Reality Labs Seattle, WA, US

**UX RESEARCH INTERN** 

May 2023 - Aug 2023

- Led a 20-participant interview study on VR headset usability, collaborating efficiently with external research vendors
- Drove innovative solutions in project brainstorming workshops and internal product demonstrations
- Effectively communicated research findings to diverse product stakeholders, fostering a deep understanding of user needs and perspectives to guide product development

Meta, Reality Labs

Burlingame, CA, US

UX RESEARCH INTERN May 2022 - Aug 2022

• Conducted comprehensive literature reviews and authored reports to guide the design of Ray-Ban | Meta smart glasses

- Designed and executed a user study with 30 participants to evaluate audio performance, providing recommendations for the optimal microphone configuration
- Presented study findings to over 100 stakeholders, including researchers, engineers, and cross-functional teams, resulting in data-driven product design changes

#### **Uncharted Software Inc., ASKE-E Team**

Toronto, ON, CA

RESEARCH INTERN

May 2021 - Aug 2021

- Contributed to the DARPA Automating Scientific Knowledge Extraction (ASKE) program, advancing Al-powered knowledge extraction systems
- Designed wireframes and implemented new features for the human-machine interface of a visual analytics system, enabling multi-scale graph analysis and facilitating knowledge discovery [P.1]

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

Markham, ON, CA

RESEARCH ENGINEER

Jan - Aug 2019, May - Aug 2020

- Developed and trained machine learning models for gesture recognition utilizing TensorFlow, enhancing the accuracy and responsiveness of gesture-based interactions
- Conducted user experiments to explore innovative mid-air and edge-based interaction techniques, contributing insights presented at 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 smartphone spectrometer, advancing portable optical technology
- Conducted tests to validate the precision and effectiveness of the devices

## **Publications**

Note: In HCI, conference proceedings are the primary way to publish research. Conference papers undergo peer review, typically with 2-3 external reviewers and 2 associate chair reviewers. Acceptance rates for the main HCI conferences range between 20% and 25%, making them highly competitive. Authors with equal contributions are indicated with an asterisk (\*).

## CONFERENCE PAPERS (PEER-REVIEWED)

# [C.15] Al as a Bridge Across Ages: Exploring The Opportunities of Artificial Intelligence in Supporting Inter-Generational Communication in Virtual Reality

QIUXIN DU\*, XIAOYING WEI\*, JIAWEI LI, **EMILY KUANG**, JIE HAO, DONGDONG WEN, MINGMING FAN *Proceedings of the ACM on Human-Computer Interaction*. CSCW. 2025
DOI: 10.1145/3710924

# [C.14] Designing LLM-Powered Multimodal Instructions to Support Rich Hands-on Skills Remote Learning: A Case Study with Massage Instructors and Learners

Chutian Jiang\*, Yinan Fan\*, Junan Xie, **Emily Kuang**, Baichuan Feng, Kaihao Zhang, Mingming Fan *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems*, 2025 DOI: 10.1145/3706598.3713677

## [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 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 BELLSCHEIDT, 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 DOI: 10.1145/3643834.3660703

[C.7] Understanding Strategies and Challenges of Conducting Daily Data Analysis (DDA) Among Blind and Lowvision 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 WANG, **EMILY KUANG**, FARNOUD KAZEMZADEH, ALEXANDER WONG International Conference on Inverse Problems in Engineering, 2017

## JOURNAL ARTICLES (PEER-REVIEWED)

 $[\mathrm{J.4}]$  How Can Haptic Feedback Assist People with Blind and Low Vision (BLV): A Systematic Literature Review

CHUTIAN JIANG\*, **EMILY KUANG\***, MINGMING FAN

ACM Transactions on Accessible Computing (TACCESS). 18, 1. 2025

DOI: 10.1145/3711931

[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 pp. 643–653. 2022 DOI: 10.1109/TVCG.2021.3114822

[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

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

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 **P** 

## **Honors and Awards**

### RECEIVED DURING PHD

- 2024 Travel Grant: Human Computer Interaction Consortium, HCIC
- 2024 Best Paper Honorable Mention Award (Top 5%) [C.12], CHI
- 2024 Outstanding Graduate Student Award, RIT
- 2023 **Google Ph.D. Fellowship in Human-Computer Interaction**, Google
- 2022 AWARE-AI NSF Research Traineeship Seed Funding Award, RIT
- ${\bf 2022} \qquad {\bf Department\ Nomination\ for\ Google\ Research\ Ph.D.\ Fellowship,\ RIT}$
- 2022 **Department Nomination for Microsoft Research Ph.D. Fellowship**, RIT
- 2022 **Travel Grant: Grad Cohort for Women Workshop**, Computing Research Association
- 2021 Best Paper Award (Top One Paper) [P.1], Workshop on Visual Analytics in Healthcare
- 2020 Merit-based Ph.D. Scholarship, RIT

## RECEIVED DURING UNDERGRADUATE

2018	<b>Experience Award</b> , 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 \_\_\_\_\_

Mar 2025	Invited speaker, Toronto Metropolitan University	Toronto, ON
Feb 2025	Invited speaker, University of Calgary	Calgary, AB
Feb 2025	Invited speaker, University of Virginia	Charlottesville, VA
Feb 2025	Invited speaker, York University	Toronto, ON
Feb 2025	Invited speaker, University of Wisconsin-Madison	Madison, WI
Sept 2024	Poster presenter, AWARE-AI Inter-institutional NRT+ Summit	Rochester, NY
Jun 2024	Invited speaker, Womxn in STEM Conference	Toronto, ON
Apr 2024	Presenter, RIT Graduate Showcase	Rochester, NY
Jan 2024	<b>Lead panelist</b> , 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

- Collaborated with the course instructor to plan and organize course materials
- Mentored students and provided constructive feedback on assignments and research projects

## **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

I have reviewed 35 submissions to date, receiving **5 special recognitions for outstanding reviews**.

2021	L-2025	<b>Reviewer</b> , CHI, CSCW, UIST, VIS, DIS, IMWUT, C&C, Chinese CHI, Frontiers in CS
2023	3-2024	Associate Chair, Chinese CHI
2	024	Session Chair, CHI 2024
2021	L-2022	Student Volunteer, VIS 2021 (virtual), CHI 2022 (in-person)

## SERVICE TO THE UNIVERSITY

2024	Panel Organizer and Co-Chair, AWARE-AI Inter-institutional NRT+ Summit
2023	PhD Student Representative, Board of Trustees Meeting
2023	PhD Student Representative, GRAD Open House
2022-2023	Trainee Council Representative, AWARE-AI NSF Research Traineeship
2022	Project Judge, Genius Olympiad

## Additional Professional Experience \_\_\_\_\_

## North Inc. (now acquired by Google)

COMPUTER VISION DEVELOPER

Kitchener, ON, CA

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 \_\_\_\_\_

07/29/2024 Autodesk Research Intern Spotlight Video,

Autodesk Life

10/16/2023 Two RIT students earn Google Ph.D. Fellowships for AI computing research,

RIT News

10/13/2023 Google PhD Fellowship recipients,

Google Research

09/30/2023 AWARE-AI NSF Research Traineeship Program Newsletter (Trainee Spotlight),

AWARE-AI NRT