Ruijia (Regina) Cheng

Researcher in Human-computer Interaction (HCI)
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Education

09/18 – 08/23 (exp.) **University of Washington (UW)**
PhD candidate in Human Centered Design & Engineering (HCDE)
Topics: Online community, Data science & programming support, Human-AI Collaboration, Creativity
Advisors: Benjamin Mako Hill, Jennifer Turns

09/18 – 03/21 **University of Washington**
Master of Science in Human Centered Design & Engineering

09/14 – 03/18 **University of California, San Diego (UCSD)**
Magna Cum Laude
Bachelor of Science in Cognitive Science with a Specialization in Computation
Bachelor of Science in Mathematics: Applied Science

Experiences

09/18 – present **Department of Human Centered Design & Engineering, University of Washington**
Graduate Research Assistant

- Led multiple research projects and published in top-tier HCI venues (e.g., CHI, CSCW). Selected projects:
  - Qualitative & quantitative research on learning and collaborative activities in various online programming and data science communities (e.g., Scratch, Kaggle, Reddit).
  - Designed and conducted user studies for block-based data visualization tools for novices.
  - Mixed method empirical research on feedback exchange in online creators' communities.

06/22– 09/22 **Microsoft Research**
PhD Research Intern in the Software Analysis and Intelligence in Engineering Systems (SAINTES) team
Supervisors: Denae Ford, Tom Zimmermann

- Designed and conducted an original multi-phase research project on how developers build trust with AI-powered code generation tools through participating in socio-technical ecosystems.
- Generated user-evaluated design guidelines coupled with visual mockup examples for the future development of GitHub Copilot and other AI-powered code generation products.

09/21– 12/21 **Dataminr Inc.**
PhD Research Intern in HCI/AI
Supervisors: Alex Jaimes, Joel Tetreault, Alison Smith-Renner, Ke Zhang

- Led research project on human-AI collaboration in text summarization and completed 2 research papers.
- Collaborated effectively with machine learning and NLP practitioners.

06/21– 09/21 **Community Data Science Collective Lab, Northwestern University**
Visiting Researcher

- Led a large-scale quantitative study on data literacy and social media discussion about COVID-19.
- Built publishable datasets of cross-platform social media activities about COVID-19.

03/21– 06/21 **Microsoft Corporation** via i2e LLC
Project Intern
Supervisor: Jonathan Grudin

- Designed and developed user scenarios and interaction guides for K-12 online search technology.

06/20 – 09/20 **Facebook Inc.**
UX Research Intern

- Designed and conducted interview, survey and user log analysis studies on video recommendation.
- Collaborated effectively with cross-functional teams and contributed to product development.

10/16 – 01/18 **Design Lab, University of California, San Diego**
Undergraduate Research Assistant
Supervisors: Steven Dow, Joel Chan, Jim Hollan

- Led survey and online experiment studies on crowd creativity and problem framing.
- Conducted thematic analyses and topic modeling on narrative patterns in computational notebooks.

Publications *indicates equal contribution of the authors

Peer-reviewed Publications

1. **Cheng, R**., Dasgupta, S., Hill, B. How Interest-Driven Content Creation Shapes Opportunities for Informal Learning in Scratch: A Case Study on Novices' Use of Data Structures. 2022. Proceedings of the ACM Conference on Human Factors in Computing Systems (CHI 2022). 🏆*Best Paper Honorable Mention Award (Top 5%)*
2. **Cheng, R**., Hill, B. Many Destinations, Many Pathways: A Quantitative Analysis of Legitimate Peripheral Participation in Scratch. 2022. Accepted to the ACM Human Computer Interaction, Computer Supported Cooperative Work and Social Computing Conference (CSCW 2022).
3. **Cheng, R**., * Frens, J.* Feedback Exchange and Online Affinity: A Case Study of Online Fanfiction Writers. 2022. Accepted to the ACM Human Computer Interaction, Computer Supported Cooperative Work and Social Computing Conference (CSCW 2022).
4. **Cheng, R.**, Smith-Renner, A., Zhang, K., Tetreault, J., Jaimes, A. Mapping the Design Space of Human-AI Interaction in Text Summarization. 2022. Accepted to the North American Chapter of the Association for Computational Linguistics Special Theme: Human-Centered Natural Language Processing (NAACL 2022).
5. Lai, V., Smith-Renner, A., Zhang, K., **Cheng, R.**, Zhang, W., Tetreault, J., Jaimes, A. An Exploration of Post-Editing Effectiveness in Text Summarization. 2022. Accepted to the North American Chapter of the Association for Computational Linguistics Special Theme: Human-Centered Natural Language Processing (NAACL 2022).
6. **Cheng, R.**, Zachry, M. Building Community Knowledge in Online Data Science Competitions: Motivation, Practices and Challenges. 2020. Proceedings of the ACM Human Computer Interaction, Computer Supported Cooperative Work and Social Computing (CSCW 2020).
7. **Cheng, R.**, Zeng, Z., Liu M., Dow, S. Critique Me: Exploring How Creators Publicly Request Feedback in an Open Online Community. 2020. Proceedings of the ACM Human Computer Interaction, Computer Supported Cooperative Work and Social Computing (CSCW 2020).

Under Review Manuscripts

8. **Cheng, R**., Wang, R., Zimmermann, T., Ford, D. Understanding and designing for online communities to support developers' trust-building in AI-powered code generation tools [Title modified to ensure blind review]. 2023. Under Review for the ACM Conference on Human Factors in Computing Systems (CHI 2023).

In-progress Manuscripts

9. Wang, R., **Cheng, R**., Ford, D., Zimmermann, T. Supporting trust in AI-powered code generation tools [Title modified to ensure blind review]. 2023. In preparation for submission to the ACM Conference on Intelligent User Interfaces (IUI 2023).

Short Papers, Posters, and Workshop Papers

10. **Cheng, R.**, Smith-Renner, A., Zhang, K., Tetreault, J., Jaimes, A. Trust and Reliance in Human-AI Collaborative Text Summarization. 2022. Workshop paper in the Trust and Reliance in Human-AI Teams workshop in the ACM Conference on Human Factors in Computing Systems (CHI 2022).
11. **Cheng, R.**, De Castro, J., Dow, S., Chan, J. 2018. An Exploratory Study of Problem Framing in Distributed Collaborative Design. Short paper in the ACM Group Conference (Group 2018).
12. Singh, F., Smith, A., Dudeck, N., Herrera, E., Lee, J., Yang, Z., **Cheng, R.**, Pineda, J. 2016. A Pilot Study to Assess the Effects of EEG-Gamma Neurofeedback on Working Memory in Schizophrenia Patients. Poster in the Society for Neuroscience 2016 Annual Conference (SfN 2016).

Invited Talks

2022	"Online Communities and Trust in AI-powered Code Generation tools." Poster presentation at the Microsoft Research Productivity & Intelligence Poster Session. Redmond, WA.
2022	"Online Communities and Trust in AI-powered Code Generation tools." Presentation at the Microsoft Research HCI intern seminar. Redmond, WA.
2022	"Mapping the Design Space of Human-AI Interaction in Text Summarization." Presentation at the NAACL'22 conference. Seattle, WA.
2022	"How Interest-Driven Content Creation Shapes Opportunities for Informal Learning in Scratch: A Case Study on Novices' Use of Data Structures." Presentation at the CHI'22 conference. New Orleans, LA.
2022	"Trust and Reliance in Human-AI Collaborative Text Summarization." Presentation at the Trust and Reliance in Human-AI Teams (TRAIT'22) workshop at the CHI'22 conference. New Orleans, LA.
2022	"Understanding and Designing for Data Literacies in Online Communities." PhD dissertation proposal presentation. University of Washington.
2021	"Data Scientists or Conspiracists: Critical Discourses about COVID Data among Pro- and Anti-vaccine Tweets." Presentation at the HCDE research seminar (Autumn 2021). University of Washington.
2021	"Imagining Future Design of Tools for Youth Data Literacies." Workshop organizer at the Connected Learning Summit 2021. Online.
2020	"Building Community Knowledge in Online Competitions: Motivation, Practices and Challenges." Presentation at the CSCW'20 conference. Online.
2020	"Critique Me: Exploring How Creators Publicly Request Feedback in an Open Online Community." Presentation at the CSCW'20 conference. Online.
2019	"Exploring Feedback Requests in an Online Critique Community." PhD preliminary exam presentation. University of Washington.
2019	"Feedback-Seeking in Online Fanfiction Communities." Poster presentation at the 2019 HCDE Research Showcase. University of Washington.

2018 "An Exploratory Study of Problem Framing in Distributed Collaborative Design." Presentation at the GROUP'18 conference. Sanibel Island, FL.

2017 "Plug-N-Talk: An Affordable Solution to Hearing Loss." Finalist presentation at the 2nd UCSD ECE Annual Design Competition. University of California, San Diego.

2016 "A Pilot Study to Assess the Effects of EEG-Gamma Neurofeedback on Working Memory in Schizophrenia Patients." Poster presentation at the SfN 2016 conference. San Diego, CA.

Skills

Programming: Python, R, MATLAB**,** SQL, JavaScript, web development (React, FastAPI, Node.js, HTML, CSS)
Qualitative research: interview, ethnography, usability testing, user scenario, grounded theory, thematic analysis
Quantitative research: survey, A/B testing, experiment design, statistical modeling, machine learning, NLP
Design: Photoshop, Figma, InDesign, Blender

Teaching

Guest Lectures

2019, 20 "A Crash Course on Statistics for Usability Testing", HCDE Usability Testing, University of Washington

Research Group Leader

2022 Directed Research Group: "Evaluative Study on Dataland: Supporting Novices to Analyze Data"

2021, 22 Directed Research Group: "Supporting Critical Capacities in Data Science through Online Interactions"

Teaching Assistant

2020, 21 HCDE Capstone, University of Washington. *Students won Best Design & Engineering awards.*

2020, 21 HCDE Capstone Project Planning, University of Washington.

2020 HCDE Qualitative Methods, University of Washington.

2019 HCDE Usability Testing, University of Washington.

2019 HCID Formative UX Research Studio, University of Washington.

Mentoring

2022 Cindy Gong, Undergrad Honor Thesis.

2019 Ziwen Zeng, Undergrad Summer Intern. *Now graduate student at Carnegie Mellon University.*

2019 Maysnow Liu, Undergrad Summer Intern.

Service

2020, 21, 22 ACM CSCW reviewer

2020, 22 ACM IDC reviewer

2021 DUB Doctoral Colloquium organizer

2021 ACM CHI reviewer

2020 UW Community Data Science Workshop mentor

2019, 20 ACM CHI Late Breaking Work reviewer

2019 UW HCDE Master program application reviewer