
Ruijia (Regina) Cheng

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Research Keywords:

Human-computer Interaction; Human-AI collaboration; Trust and reliance in AI; Social computing; Data science & programming support; Computational literacies; Learning technology

Education

09/18 – **University of Washington (UW)**

06/23 PhD candidate in Human Centered Design & Engineering (HCDE)

(exp.) Advisors: Benjamin Mako Hill, Jennifer Turns

09/18 – **University of Washington**

03/21 Master of Science in Human Centered Design & Engineering

09/14 – **University of California, San Diego (UCSD)**

03/18 *Magna Cum Laude*

Bachelor of Science in Cognitive Science with a Specialization in Computation

Bachelor of Science in Mathematics: Applied Science

Academic & Professional Experiences

09/18 – **Department of Human Centered Design & Engineering, University of Washington**

present *Graduate Research Assistant.*

- Led research projects that used mix method approaches to understand and design for informal learning of computational skills in online communities [C3, C4], data science collaboration and communication [C6], visual block-based programming systems for data science learning [U3], and creative feedback exchange [C5, C7].

06/22 – **Microsoft Research**

09/22 *PhD Research Intern. Software Analysis and Intelligence in Engineering Systems (SAINTES).*

Supervisors: Danae Ford, Tom Zimmermann.

- Led a multi-phase research project (interview, prototyping, and design probe) on how developers build trust with AI-powered code generation tools through participating in socio-technical ecosystems [U1].
- Collaborated in research about responsible design in AI-powered code generation tools [U2].
- Contributed to metrics of trust in AI for software development.
- Reported to director-level stakeholders; contributed to future design of GitHub Copilot with concrete design guidelines and visual prototypes.

Dataminr09/21– *PhD Research Intern. HCI/AI.*12/21 *Supervisors: Alison Smith-Renner, Ke Zhang.*

- Led and collaborated in research on human-in-the-loop text summarization [C1, C2, S1].
- Conducted a systematic literature review and synthesized 600+ papers into design patterns.
- Developed interactive prototypes and conducted design probe interview studies with crowd workers.
- Laid the foundation for the design of internal human-AI collaborative text summarization tools.

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

- Led a large-scale quantitative study on data literacy and social media discussion about COVID-19 [U4].
- Built datasets of cross-platform social media activities about COVID-19.

03/21– **Microsoft Corporation** via i2e LLC06/21 *Project Intern.**Supervisor: Jonathan Grudin.*

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

06/20 – **Meta**09/20 *UX Research Intern.*

- Designed & conducted usability tests, 20k+ in-app surveys in 5 countries, and 20k+ user logs analysis.
- Impacted the design of recommendation algorithms and video players.
- Collaborated effectively with cross-functional teams (engineering, design, and data) and vendors.

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

- Led survey and online experiment studies on crowd creativity and problem framing [S2].
- Conducted thematic analyses and topic modeling on narrative patterns in computational notebooks.

Publications *indicates equal contribution of the authors**Peer-reviewed Conference Proceedings**

C1. **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).

C2. 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).

C3. **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%)**

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- C4. **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).
- C5. **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).
- C6. **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).
- C7. **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

- U1. **Cheng, R.**, Wang, R., Zimmermann, T., & Ford, D. (2023). " It would work for me too": How Online Communities Shape Software Developers' Trust in AI-Powered Code Generation Tools. *arXiv preprint arXiv:2212.03491*. Under Submission to the ACM Transactions on Computer-Human Interaction (TOCHI)
- U2. Wang, R., **Cheng, R.**, Ford, D., Zimmermann, T. Responsible Design in AI-powered Code Generation [Title modified to ensure blind review]. 2023. Under Submission to the ACM Conference on Fairness, Accountability, and Transparency (FAccT 2023).
- U3. **Cheng, R.**, Dangol, A., Ello, F., Wang, L., Dasgupta, S. Designing a Visual Block-based System for Young People to Learn Data Analysis and Visualization [Title modified to ensure blind review]. 2023. Under review for the ACM Interaction Design and Children Conference (IDC 2023).
- U4. **Cheng, R.**, Shaw, A., Hill, B. Critical Data Literacies in Twitter Discussion about COVID-19 Vaccines [Title modified to ensure blind review]. 2023. Under submission to Scientific Reports.

Short Papers, Posters, and Workshop Papers

- S1. **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).
- S2. **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).
- S3. 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).

Awards & Honors

- 2022 Best Paper Honorable Mention Award, CHI 2022
- 2020 Special Recognition of Outstanding Reviews, CSCW 2020
- 2014–18 Provost Honor, University of California, San Diego

Invited Talks

- 2022 “Developer’s Trust in AI-powered Code Generation.” Presentation at Microsoft Research. Webinar.
- 2022 “Supporting Computational Learning in Online Communities.” Speaker at Microsoft MakeCode. Microsoft Research. Webinar.
- 2022 “Understanding and Supporting Informal Learning in Online Communities.” Presentation at The Expertise@scale Salon. Emory University. Webinar.
- 2022 “All Communities Are Learning Communities.” Speaker at The Science of Community Dialogues. Community Data Science Collective. Webinar.
- 2022 “Online Communities and Trust in AI-powered Code Generation tools.” Presentation at Microsoft Research HCI seminar. Microsoft Research. Redmond, WA.
- 2022 “Understanding and Designing for Data Literacies in Online Communities.” PhD dissertation proposal presentation. University of Washington. Webinar.
- 2021 “Data Scientists or Conspiracists: Critical Discourses about COVID Data among Pro- and Anti-vaccine Tweets.” Speaker at the HCDE research seminar (Autumn 2021). University of Washington. Webinar.
- 2021 “Imagining Future Design of Tools for Youth Data Literacies.” Workshop organizer at the Connected Learning Summit 2021. Webinar.
- 2019 “Exploring Feedback Requests in an Online Critique Community.” PhD preliminary exam presentation. University of Washington. Seattle, WA.
- 2019 “Feedback-Seeking in Online Fanfiction Communities.” Poster presentation at the 2019 HCDE Research Showcase. University of Washington. Seattle, WA.
- 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. San Diego, CA.

Teaching

Guest Lectures

- 2019, 20 “A Crash Course on Statistics for Usability Testing.” HCDE Usability Testing, University of Washington.

Directed Research Group

- 2022 “Evaluative Study on Dataland: Supporting Novices to Analyze Data.” University of Washington.
- 2021, 22 “Supporting Critical Capacities in Data Science through Online Interactions.” University of Washington.

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 HCI+D Formative UX Research Studio. University of Washington.

Mentoring

- 2022–23 Cindy Gong. Undergraduate honor thesis.
- 2022–23 Frannie Ello. Undergraduate research assistant.
- 2019 Ziwen Zeng. Undergraduate summer intern.
- 2019 Maysnow Liu. Undergraduate summer intern.

Academic Services

- 2023 ACM FAccT program committee
- 2022 ACM TiiS reviewer
- 2022 UW DUB student ambassador
- 2020–22 ACM CSCW reviewer
- 2020, 22 ACM IDC reviewer
- 2019–21 ACM CHI reviewer
- 2021 Youth Data Literacies Workshop organizer at Connected Learning Summit
- 2021 UW DUB Doctoral Colloquium organizer
- 2020 Community Data Science Workshop organizer
- 2019 UW HCDE Master program application reviewer