Ruijia (Regina) Cheng

rcheng6@uw.edu | https://reginachangzhou.github.io

Education

09/18 - present **University of Washington (UW)**
PhD student in Human Centered Design & Engineering (HCDE)

06/18 **University of California, San Diego (UCSD)** *Magna Cum Laude*
BS Cognitive science with a specialization in computation
BS Mathematics/applied science

Research Projects

UCSD Design Lab Summer Internship

06/19- present **Online community feedback exchange mechanism** *advised by Steven Dow*
Studying how designers motivate and scaffold feedback providers in large online communities

- Scraped and analyzed ~300 thousands design critique posts and comments from Reddit using descriptive + inferential statistical methods, semantic analysis and machine learning techniques
- Developed qualitative coding scheme on community feedback exchange features from Reddit post and comments data via the Grounded theory approach
- Designed, conducted and analyzed 12 semi-structured interviews with Reddit users
- Led and mentored 2 undergraduate students to conduct research

UW HCDE

06/19- present **Collaboration in online data science competitions** *advised by Mark Zachry*
Studying learning and collaborative behaviors in online data science competition platform

- Analyzed ~150 thousands competition and user contribution logs from Kaggle using descriptive + inferential statistical methods and machine learning techniques
- Designed, conducted and analyzed semi-structured interviews with Kaggle users

04/19- 05/19 **Project-based learning in university Makerspaces** *advised by Charlotte Lee*
Studying project-based learning and makerspace usage in Commotion Makerspace at UW

- Conducted 20+ hours filed observation in Commotion Makerspace
- Conducted 12 semi-structured interviews with Commotion Makerspace users
- Developed qualitative coding scheme from interview and observation data via the Grounded theory approach
- Found usage makerspace orthogonal to student's project process; written up a technical report

11/18- present **Feedback-seeking in online learning communities** *advised by Cecilia Aragon*
Studying fanfiction authors' obstacles and strategies in feedback-seeking practice

- Designed interview study with another student
- Recruited interviewees and conducted 30 semi-structured interviews with fanfiction authors
- Used Ground Theory methods to thematically code and analyzing interview data

09/18-06/19 **Sentiment classification on online learning feedback** *advised by Cecilia Aragon*

Studied usage of sentiment classifier ALOE on comments from fanfiction.net

- Led a group of students qualitatively code 3500+ fanfiction comments
- Calculated interrater reliability metrics; held weekly discussion sessions for interrater reliability
- Transferred qualitatively coded feedback to training and testing dataset

UCSD Design Lab

11/16-10/17 **Problem framing** *advised by Steven Dow, Joel Chan(CMU)*

Studied effects of problem framing on distributed collaborative design

- Designed surveys for frame collection and evaluation
- Collaborated in designing experiments and interface for crowd idea generation
- Qualitatively and quantitatively analyzed survey and online experiment data
- First author of resulting working paper (See publication section)

07/17-12/17 **Narrative scientific computing** *advised by Jim Hollan, Adam Rule*

Studied narrative features in scientific data analysis on a large scale of Jupyter notebooks

- Contributed to paper Exploration and Explanation in Computational Notebooks (Honorable Mention in CHI 2018)
- Designed user-participated design workshops for Jupyter notebooks extensions
- Scraped, cleaned, and conducted semantic mining among 1.5 million notebooks and metadata from GitHub using Python
- Qualitatively analyzed narrative features in notebooks and metadata

03/17-06/17 **Jupyter notebook for education project** *advised by Jim Hollan, Adam Rule*

Studied how students use Jupyter notebooks to study data science

- Conducted interviews & observation studies about Jupyter notebook usage in class for 3 months
- Qualitatively analyzed observational data using affinity diagrams and quantitatively analyzed survey data using descriptive statistics
- Designed and Developed JavaScript extension for import history on Jupyter Notebook

UCSD Cognitive Neuroscience Lab

01/16-12/17 **EEG neurofeedback project** *advised by Jaime Pineda, Fiza Singh*

Studied Effects of EEG-Gamma neurofeedback on working memory in schizophrenia (SCZ)

- Fine-tuned machine learning models (linear classification, SVM, random forest); designed and executed classification experiments using Matlab
- Ran neurofeedback training sessions and collected EEG data on SCZ patients;
- Performed prepreprocessing, ICA and power analysis on EEG data using EEGLab in Matlab

Publications and Conferences

1. **Cheng, R.**, De Castro, J., Dow, S., Chan, J. (2017) An exploratory study of problem framing in distributed collaborative design *working paper in 2018 ACM GROUP conference*
2. 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 presented at Society for Neuroscience(SfN) 2016 annual conference*

Teaching

Spring 2019 UW HCID 531 Evaluation Studio (UX Research Studio) Teaching Assistant

Design Projects

09/18-12/18 **Flappy Band** leading UX researcher in a team of 4 graduate students
Cartoon voice-controlled wearable for K-12 student-teacher out-classroom communication

- Interviewed and observed 20+ 1st and 2nd graders; interviewed 5 teachers
- Brainstormed and Sketched 20+ ideas; Build paper prototypes
- Ran usability tests on 5 students and 3 teachers using paper prototype
- Built high-fidelity 3D-printed prototype and video-prototype

09/16-06/17 **Plug-n-talk** leading UX researcher in a team of 8 undergraduate students
ios app prototype as a cheaper alternative to current hearing aids *UCSD Design for Senior Citizens*

- Conducted 20+ hour observation at a retirement community; interviewed 8 seniors; 5 month ethnographic study with a senior community member
- Built storyboards; held brainstorming sessions with seniors
- Built low-fidelity wizard-of-oz prototype and ran usability test with it
- Resulted in a working app that reduces noise and adjusts frequency in real-time conversations

Skills

Qualitative methods: interview; field observation; persona; storyboarding; usability test; qualitative coding

Quantitative methods: survey design; A/B testing; statistical modeling

Prototyping and design: Sketch, Photoshop

Data science: Python, Matlab, R, SQL; Natural language processing (NLTK, WordNet, LIWC, pattern.en); machine learning

Software development: Python, HTML, CSS, JavaScript

Services

2019 UW HCDE master application reviewer

2019 ACM CHI 2019 Late Breaking Work reviewer