

# Ruijia(Regina) Cheng

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## Education

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- 09/2018 - present    University of Washington (UW)  
PhD student in Human Centered Design & Engineering (HCDE)
- 06/2018                University of California, San Diego (UCSD)  
BS Cognitive science with a specialization in computation  
BS Mathematics/applied science  
*Magna Cum Laude*

## Publication

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### *Working paper*

**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*

### *Conference Poster Presentation*

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*

## Graduate Research Assistantship

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### *UW HCDE HDS lab*

- 09/2018-present    **Distributed mentoring in online fanfiction communities** *advised by prof. Cecilia Aragon*  
Studying how distributed mentoring helps fanfiction authors with their writing
- Leading a group of students conduct qualitative analysis on fanfiction reviews

## Undergraduate Research Experience

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### *UCSD Protolab*

- 11/2016-10/2017    **Problem framing project** *advised by prof. Steven Dow, dr. Joel Chan(CMU)*  
Studied effects of problem framing on distributed collaborative design
- Designed surveys for frame collection and evaluation
  - Participated 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)

### *UCSD Design Lab*

- 07/2017-12/2017    **Narrative scientific computing project** *advised by prof. Jim Hollan, Adam Rule*  
Studied narrative feature in scientific data analysis on large scale of Jupyter notebooks
- **Participated in paper Exploration and Explanation in Computational Notebooks (Honorable Mention in CHI 2018)**
  - Scraped and cleaned 1.5 million notebooks and metadata from GitHub
  - Conducted semantic mining among 1.5 million notebooks
  - Qualitatively analyzed narrative features in notebooks and metadata

- Planned user-participated design workshops for extensions development
- 03/2017-06/2017 **Jupyter notebook for education project** *advised by prof. Jim Hollan, Adam Rule*  
Studied how beginners use Jupyter notebooks to study data science
- Interviewed students and instructors, observed notebook usage in class for 3 months
  - Qualitatively analyzed observational data and quantitatively analyzed survey data
  - Proposed design spaces and wrote report
  - Developed JavaScript extension for cleaning up import history on Jupyter Notebook

### *UCSD Cognitive Neuroscience Lab*

- 01/2016-12/2017 **EEG neurofeedback project** *advised by prof. Jaime Pineda, dr. Fiza Singh*  
Studied Effects of EEG-Gamma neurofeedback on working memory in schizophrenia (SCZ) patients
- Fine-tuned machine learning models; designed and executed classification experiments on EEG data collected from SCZ patients
  - Ran neurofeedback training sessions and recorded EEG data on SCZ patients
  - Performed preprocessing, ICA and power analysis on EEG data

## Skills

**Qualitative methods:** interview and observation; survey design; storyboarding; heuristic evaluation; usability test; Google Analytics

**Prototyping and design:** Sketch, Photoshop

**Data analysis:** Python, Matlab, R, SQL

**Software development:** Python, HTML, CSS, JavaScript,

**Computation and machine learning:** Bayesian; K-means; KNN; spectral clustering; PCA; ICA; regressions; EM; logistic regression; SVM; random forest; multilayer perception; convolutional neural network; word2vec

## Recognitions

2017	UCSD Frontiers of Innovation Scholars Program (FISP) funding <i>PI: Fiza Singh</i>
2017, 2016, 2015	UCSD Revelle College Honor Student
08/2016	Discovery Lab Global 2016 “Challenge Coin” for outstanding interns
Every quarter	UCSD Provost Honor

## Internship

2016.2-2016.8	Discovery Lab Global 2016 research intern Developed “MindMap”: 3D printed visualization of EEG based BCI
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## Projects

**Plug-n-talk ios app:** a cheaper alternative to current hearing aids *UCSD Design Competition for senior citizens*

**Unity X Neurosky BCI:** a VR game of using attention to shoot bricks

**Classifier of real-life photos and CG pictures:** fine-tuned multiple convolutional neural networks

**Dine-with-me web app:** a geographical social app on finding lunch buddies on campus

**PRO web app:** a personal productivity tracking tool

## Organizations

Webmaster of 2016 UCSD International Cognitive Science Conference Committee

Active member of 2014 – 2015 UCSD Revelle College Emerging Leaders Program