Ruijia(Regina) Cheng

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Education

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

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

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

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 a large scale of Jupyter notebooks

- Participated in the 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 students 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

Quantitative 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 *PI: Fiza Singh*
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

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 in which users use their attention to shoot bricks

Classifier of real-life photos and CG pictures: application of convolutional neural networks

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

PRO web app: a personal productivity tracking tool prototype

Organizations

Webmaster of 2016 UCSD International Cognitive Science Conference Committee

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