

# YOU (LILIAN) CHENG

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## AREA OF RESEARCH

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Dementia, Learning and Memory, Human Navigation, Computational Neuroscience, Neuroimaging

## ACADEMIC POSITIONS

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### Postdoctoral Research Fellow

July 2022 - Present

*Massachusetts General Hospital (MGH) & Harvard Medical School (HMS), Boston, MA, USA*

## EDUCATION

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### Ph.D., Cognitive Sciences with a Concentration in Cognitive Neuroscience

June 2022

*University of California, Irvine (UCI), Irvine, CA, USA*

*Dissertation: Travel Direction as a Fundamental Component of Human Navigation: Integrating Psychophysics, Neuroimaging, and Computational Modeling Approaches (Advisor: Dr. Elizabeth R. Chrastil)*

*Committee Members: Dr. Jefferey Krichmar, Dr. Bruce McNaughton, Dr. Emily Grossman, Dr. Ramesh Srinivasan*

### M.S., Cognitive Neuroscience

Dec. 2020

*University of California, Irvine (UCI), Irvine, CA, USA*

### M.A., Geography

Sept. 2019

*University of California, Santa Barbara (UCSB), Santa Barbara, CA, USA*

*Thesis: The Influence of Handedness on Mental Rotation of Hands (Advisor: Dr. Elizabeth R. Chrastil)*

*Committee Members: Dr. Mary Hegarty, Dr. Daniel R. Montello*

### B.S., Psychology

June 2014

*South China Normal University (SCNU), Guangzhou, Guangdong, China*

*Thesis: The Influence of Doppler Effects on Ponzo Illusion (Advisor: Dr. Qi Chen)*

## GRANTS & FELLOWSHIPS

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- 2022 Research Education Component (REC) Scholar (\$5,000). *Massachusetts Alzheimer's Disease Research Center (MADRC), MGH&HMS*
- 2021 Cascade Mentoring Fellowship (\$6,000). *School of Social Sciences, UCI*
- 2020 Social Sciences Instructional Fellowship (\$2,500). *School of Social Sciences, UCI*
- 2019 Methods U at UCSB Scholarship. *Graduate Division, UCSB*
- 2019 Crossroads Fellow (\$8,000). *UCSB*
- 2018 Summer Research Fund (\$2,400). *Department of Geography, UCSB*
- 2014 Zhang Wenjin Fellowship (\$400). *SCNU*
- "The influence of time perception on time-based prospective memory." PI (Co-PI, Yinxin Liang) National Undergraduate Training Program for Innovation and Entrepreneurship Grant No. 201210574079, 2/16/12 - 2/16/13 (\$1,000). *Ministry of Education of the People's Republic of China*
- "The mechanism of mixed-prospective memory." Co-PI (PI, Yinxin Liang), University Undergraduate Training Program for Innovation and Entrepreneurship Grant 3/15/12 - 3/15/13 (\$200). *SCNU*

## AWARDS & HONORS

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### Academic

- 2021 Roger W. Russell Scholar's Award (\$1000). *Center for the Neurobiology of Learning and Memory, UCI*
- 2021 Audience Choice Award. *Associated Graduate Students (AGS) Virtual Symposium, UCI*
- 2021 AGS Virtual Conference Grant Award (three times, \$750 in total). *Graduate Division, UCI*
- 2020 Trainee Professional Development Award (TPDA). *Society for Neuroscience*
- 2018 Graduate Students Association Conference Travel Award. *Graduate Division, UCSB*
- 2017 - 2018 Jack & Laura Dangermond Travel Scholarship Award (four times, \$2300 in total). *Department of Geography, UCSB*
- 2015 Marie A. Center Memorial Travel Award. *Dartmouth College*
- 2015 Neukom Travel Award (\$1000). *Dartmouth College*
- 2013 Excellent Student in Academic Research. *School of Psychology, SCNU*

### Professional Development

- 2021 1st Place Team of the Business Pitch Competition. *GPS STEM & Beall Applied Innovation, UCI*
- 2020 Finalist Team in AI4Good 2020 Hackathon. *TECHAiDE*
- 2020 Runner-Up Team in WaiDATATHON for Sustainable Future. *WaiACCELERATE & Women in AI (WAI)*
- 2012 Excellent Student in Social Activities. *School of Psychology, SCNU*
- 2011 Third Prize in Chinese Calligraphy Contest. *SCNU*
- 2010 Excellent Award in Special Investigation Competition. *SCNU*

## PRE-PRINT PUBLICATIONS

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- **Cheng, Y.**, Chrastil, E.R.. From Individual Cognitive Maps to a Collective Cognitive Map: Prescriptive Guidelines and Measurement of Factors that Could Distort the Mapping Process. *PsyArXiv*  
<https://doi.org/10.31234/osf.io/7y9k2> pdf
- **Cheng, Y.** (2021, August 19). Review of: "Preventing a loss of accuracy of the tennis serve under pressure". *Qeios*  
<https://doi.org/10.32388/DY0PA4> pdf
- 't Hart, B. M., Achakulvisut, T., Blohm, G., Kording, K., Peters, M. A. K., Akrami, A., ... **Cheng, Y.**, Hyafil, A. (2021, February 15). Neuromatch Academy: a 3-week, online summer school in computational neuroscience. *OSF preprint* <https://doi.org/10.31219/osf.io/9fp4v> pdf

## REFEREED JOURNAL PUBLICATIONS

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- **Cheng, Y.**, Hegarty, M., Chrastil, E. R. (2020). Telling right from right: the influence of handedness in the mental rotation of hands. *Cognitive Research: Principles and Implications*, 5, 1-18. pdf
- Sun, L., Tan, P. \*, **Cheng, Y.** \*, Chen, J., Qu, C. (2015). The effect of altruistic tendency on fairness in third-party punishment. *Frontiers in psychology*, 6, 820. \*denotes equal authorship pdf
- Qu, L., Dou, W., **Cheng, Y.**, Qu, C. (2014). The processing course of conflicts in third-party punishment: An event-related potential study. *PsyCh journal*, 3(3), 214-221. pdf

## BOOK CHAPTERS

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- Chrastil, E. R., **Cheng, Y.**. Central Coordination and Integration of Diverse Information to Form a Single Map. In R. D. Montello & K. M. Curtin (Eds.), *Collective Spatial Cognition: A Research Agenda*. Routledge (Taylor and Francis). (*in press*)

## MANUSCRIPTS IN PREP AND UNDER REVIEW

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- **Cheng, Y.**, Chrastil, E.R.. From Individual Cognitive Maps to a Collective Cognitive Map: Prescriptive Guidelines and Measurement of Factors that Could Distort the Mapping Process. (*submitted to Group Dynamics: Theory, Research, and Practice*)
- 't Hart, B. M., Achakulvisut, T., Blohm, G., Kording, K., Peters, M. A. K., Akrami, A., ... **Cheng, Y.**, ... , Hyafil, A. (2021, February 15). Neuromatch Academy: a 3-week, online summer school in computational neuroscience. (*submitted to the Journal of Open Source Education*)
- **Cheng, Y.\***, He C. \*, Hegarty M., Chrastil, E.R.. Who Believes They Are Good Navigators? A Machine Learning Pipeline Highlights the Impact of Gender, Commuting Time, and Education (*submitted to Information Processing and Management*) \*denotes equal authorship

- **Cheng, Y.**, Ling, S., Stern, C. E., Huang, A., Chrastil, E.R.. (Don't) Look Where You're Going: Evidence for a Travel Direction Signal in Humans that is Independent of Head Direction. (*under review by Current Biology*)
- **Cheng, Y.**, Ling, S., Stern, C. E., Chrastil, E.R.. The Distributed Head and Travel Direction System in the Human Brain During Active Navigation: Past, Present, and Future (*in preparation*)
- **Cheng, Y.**, Chrastil, E.R., Krichmar, J.. A Recurrent Neural Network Model of Travel Direction in Humans. (*in preparation*)
- **Cheng, Y.**, Lingad, J., Guzowski J., Yassa M.. Inflammation in Medial Temporal Lobe for Navigation Function. (*in preparation*)

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## REVIEW

### Ad Hoc Journal Referee

- Neuropsychology (Ad-hoc mentored reviewer with Dr. Whitney Fosco)
- Quarterly Journal of Experimental Psychology
- Brain and Behavior
- Communications Biology
- Current Psychology
- Qeios

### Conference Proposal Referee

- 2021 Grace Hopper Celebration of Women in Computing (vGHC) - CFP Proposals for Workshops and Presentations in the Data Science Track

### Application Review

- Neuromatch Academy 2021 - Computational Neuroscience Student Application

### Curricular Review

- Neuromatch Academy 2021 - Computational Neuroscience Tutorials (Model Types, Machine Learning, Reinforcement Learning, Deep Learning, Neuroscience Refresher Introduction)
- Neuromatch Academy 2021 - Deep Learning Tutorials (Parameter Sharing: ConvNets and RNNs, Modern RNNs, Attention and Transformers, Reinforcement Learning Basics)
- Coursera Guided Project (3D SARS-CoV-19 Protein Visualization With Biopython)

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## SELECT PRESENTATIONS

### Invited Talks

- **Cheng, Y.**.. A Unique Journey After Graduation - Graduate Student Spotlight. *UCI Cognitive Sciences Association*. Nov., 2021.
- **Cheng, Y.**.. Finding the Compass: Head Direction Signals in the Human Brain. *UCI CNLM Awards Ceremony, Virtual*. May, 2021.

### Oral Presentations

- **Cheng, Y.**, Chrastil, E.R.. Sex Differences in Head Direction Signals When Learning a Complex Environment. *Neuromatch Conference 4.0 Flash Talk, Virtual*, Dec., 2021.
- **Cheng, Y.**.. Head Direction Signals in the Human Brain When Exploring in a Complex Environment. *UCI Cognitive Sciences Colloquium Flash Talk*. Dec., 2021.
- **Cheng, Y.**.. Head Direction Signals in the Human Brain When Exploring in a Complex Environment. *UCI Cognitive Sciences Colloquium Flash Talk*. Nov., 2021.
- **Cheng, Y.**.. Head Direction Signals in the Human Brain When Exploring in a Complex Environment: A Machine Learning Approach. *UCI Cognitive Sciences Colloquium Flash Talk*. Oct., 2021.
- **Cheng, Y.**.. Travel Direction as a Fundamental Component of Human Navigation. *UCI Cognitive Sciences Colloquium Flash Talk*. Oct., 2021.
- **Cheng, Y.**, Chrastil, E.R.. Head Direction Signals During Navigation. *Virtual Spring CNLM Conference - Memory: It's About Time, Virtual*. May, 2021.
- **Cheng, Y.**, Chrastil, E.R.. The Emergence of Head Direction Signals in Human Navigation. *UCI Associated Graduate Students (AGS) Symposium, Virtual*. April, 2021. **Audience Choice Award**.
- **Cheng, Y.**, Ling, S., Stern, C. E., Huang, A., Chrastil, E.R.. Travel Direction as a Fundamental Component of Human Navigation. *Neuromatch Conference 3.0, Virtual*. Oct., 2020.
- **Cheng, Y.**, Ling, S., Stern, C. E., Huang, A., Chrastil, E.R.. Travel Direction as a Fundamental Component of Human Navigation. *Interdisciplinary Navigation Symposium (iNAV), Virtual*. Oct., 2020.

- **Cheng, Y.** Travel Direction as a Fundamental Component of Human Navigation. *UCI Cognitive Sciences Advancement Talk, Virtual. March, 2020.*
- **Cheng, Y.** Travel Direction as a Fundamental Component of Human Navigation. *UCI Cognitive Sciences Department Graduate Student Presentation Bonanza, Irvine. Jan., 2020.*
- **Cheng, Y.** What Are the Sex Differences in Navigation Training? Using the Sea Hero Quest Dataset. *UCSB Crossroads Symposium, Santa Barbara. Nov., 2019.*
- Downs, M., Davis, F., Brun, J., Huang, T., **Cheng, Y.** Greater Than the Sum of the Parts: Collaboration in the U.S. LTER Network. *International Long-Term Ecosystem Research Open Science Meeting (ILTER OSM), Leipzig, Germany. Sept., 2019.*
- **Cheng, Y.** Domain-General Distance Representation. *Spring Quarter UCSB Geography Department Colloquium, Santa Barbara. May, 2019.*
- **Cheng, Y.**, Chrastil, E.R.. From Individual Cognitive Maps to a Collective Cognitive Map: Prescriptive Guidelines. *Collective Spatial Cognition Specialist Meeting, Santa Barbara. April, 2019.*
- **Cheng, Y.** Left Hand, Right Hand. *2018 Spatial Lightning Talks, UCSB Center for Spatial Studies. University of California, Santa Barbara. Feb 9, 2018.*
- **Cheng, Y.**, Liang, Y., Tang, Z., Qu, C., Chen, C.. Mixed Time-Based and Event-Based Prospective Memory: A Behavioral Study. *the 16th National Academic Congress of Psychology, Nanjing, China. Nov., 2013.*

#### Poster Presentations

- **Cheng, Y.**, Chrastil, E.R., Krichmar, J.. A Recurrent Neural Network Model of Travel Direction in Humans. *Women in Machine Learning (WiML) Un-Workshop, International Conference on Machine Learning (ICML), Virtual. July, 2022.*
- **Cheng, Y.**, Chrastil, E.R., Krichmar, J.. A Recurrent Neural Network Model of Travel Direction in Humans. *Interdisciplinary Navigation Symposium (iNAV), Virtual. June, 2022.*
- **Cheng, Y.**, Ling, S., Stern, C. E., Huang, A., Chrastil, E.R.. Travel Direction as a Fundamental Component of Human Navigation. *Harvard Women in Psychology's Annual Trends in Psychology Summit (TiPS), Virtual, Nov., 2021.*
- **Cheng, Y.**, Chrastil, E.R.. Sex Differences in Head Direction Signals When Learning a Complex Environment. *Society for Neuroscience, Virtual. Nov., 2021.*
- **Cheng, Y.\***, He C. \*, Spiers H., Coutrot A., Hornberger M., Hegarty M., Chrastil, E.R.. Self-Evaluations of Navigation Ability: A Big Data Approach. *Psychonomic Society Annual Meeting, Virtual. Nov., 2021.* \*denotes equal authorship
- **Cheng, Y.**, Chrastil, E.R.. Head Direction Signals During Navigation: Comparing Movement And Stationary Periods. *Spatial Cognition, Virtual. Aug., 2021.*
- **Cheng, Y.**, Chrastil, E.R.. The Emergence of Head Direction Signals in a Complex Environment. *Annual Meeting of the Organization for Human Brain Mapping (OHBM), Virtual. June, 2021.*
- **Cheng, Y.**, Chrastil, E.R.. The Emergence of Head Direction Signals in Human Navigation. *spatial@ucsb.global2021: Spatial Data Science for a Sustainable Future, Virtual. June, 2021.*
- **Cheng, Y.**, Chrastil, E.R.. The Emergence of Head Direction Signals in Human Navigation. *Cognitive Neuroscience Society (CNS) Annual Meeting, Virtual. March, 2021.*
- **Cheng, Y.**, Chrastil, E.R.. The Emergence of Head Direction Signals in Human Navigation. *Interdepartmental Neuroscience Program (INP) recruitment session, Virtual. Jan., 2021.*
- **Cheng, Y.**, Chrastil, E.R.. The Emergence of Head Direction Signals in Human Navigation. *Society for Neuroscience Global Connectome, Virtual. Jan., 2021.*
- **Cheng, Y.**, Chrastil, E.R.. The Emergence of Head Direction Signals in Human Navigation. *Psychonomic Society Annual Meeting, Virtual. Nov., 2020.*
- Downs, M., Brun, J., Huang, T., **Cheng, Y.** Greater Than the Sum of the Parts: Collaboration in and Beyond the U.S. LTER Network. *Ecological Society of America Annual Meeting, Virtual. Aug., 2020.*
- **Cheng, Y.**, Ling, S., Stern, C. E., Huang, A., Chrastil, E.R.. Travel Direction as a Fundamental Component of Human Navigation. *Interdepartmental Neuroscience Program (INP) recruitment session, Irvine. Jan., 2020.*
- **Cheng, Y.**, Ling, S., Stern, C. E., Huang, A., Chrastil, E.R.. Travel Direction as a Fundamental Component of Human Navigation. *Psychonomic Society Annual Meeting, Montreal, Canada. Nov., 2019.*
- **Cheng, Y.**, Hegarty, M., Chrastil, E.R.. Embodied Experience of the 'Wrong' Hand, Not World Knowledge, Supports the Mental Rotation of Hands. *Psychonomic Society Annual Meeting, New Orleans, USA. Nov., 2018.*
- **Cheng, Y.**, Hegarty, M., Chrastil, E.R.. Performance Discrepancy Between Left-handers and Right-handers Reveals Multisensory Integration in the Mental Rotation of Hands. *Spatial Cognition, Tübingen, Germany. Aug., 2018.*

- **Cheng, Y.**, Ling, S., Stern, C. E., Huang, A., Chrastil, E.R.. Travel Direction as a Fundamental Component of Human Navigation. *Interdisciplinary Navigation Symposium (iNAV)*, Quebec, Canada. June, 2018.
- **Cheng, Y.**, Ling, S., Stern, C. E., Huang, A., Chrastil, E.R.. Are You Getting Closer to the Sun or to the Moon? An Unusual Motion Adaptation Effect of Travel Direction. *spatial@ucsb.local2018*, UCSB Center for Spatial Studies. University of California, Santa Barbara. June, 2018.
- Chrastil, E.R., Nicora, G., Davis, R., Smith, J., **Cheng, Y.**. The Influence of Decision-Making on Spatial Learning and Memory: An Individual Differences Approach. *Society for Neuroscience Annual Meeting*, Washington DC, USA. Nov., 2017.
- **Cheng, Y.**, Qu, C.. Cost Consideration Driven by Prosociality in Third-party Punishment: Using Feedback Related Negativity. *Society for Neuroscience Annual Meeting*, Chicago, USA. Oct., 2015.

## RESEARCH EXPERIENCE

<b>MIND Data Science Lab, Massachusetts General Hospital</b> <i>PI: Dr. Sudashna Das</i>	July 2022 - Present Cambridge, MA
<ul style="list-style-type: none"> <li>• Predict stages of Alzheimer's disease using natural language processing (NLP)</li> </ul>	
<b>Cognitive Anteater Robotics Lab, UCI</b> <i>PI: Dr. Jeffrey Krichmar</i>	Jan. 2021 – June 2022 Irvine, CA
<ul style="list-style-type: none"> <li>• Studied the artificial neural network of travel direction system in the human brain</li> <li>• Utilized computational modeling and virtual robot simulation</li> </ul>	
<b>Spatial Neuroscience Lab, UCI</b> <i>PI: Dr. Elizabeth R. Chrastil</i>	Sept. 2019 – June 2022 Irvine, CA
<ul style="list-style-type: none"> <li>• Studied the biological neural network of travel direction system in the human brain</li> <li>• Utilized psychophysics, virtual reality, and fMRI</li> </ul>	
<b>Spatial Neuroscience Lab, UCSB</b> <i>PI: Dr. Elizabeth R. Chrastil</i>	July 2017 – Sept. 2019 Santa Barbara, CA
<ul style="list-style-type: none"> <li>• Studied distance perception and handedness in spatial cognition</li> <li>• Lab moved from UCI to UCSB in 2019</li> </ul>	

## MEDIA COVERAGE

- Research on sex differences in navigation featured in "UCSB Crossroads," 2019/20 UCSB Graduate Division Magazine p.45 (11/15/19)

## UNIVERSITY TEACHING EXPERIENCE

<b>Curriculum Development &amp; Instructional Materials</b>	
<ul style="list-style-type: none"> <li>• Developed a website "<u>Building your teaching styles</u>" to help college TAs/Instructors build teaching styles</li> <li>• Developed a teaching video "<u>Sex Differences in Navigation from a Human Geographer's Perspective</u>" (for undergraduate psychology, geography, neuroscience, and anthropology courses)</li> </ul>	
<b>Instructor of Record</b> <i>"Psychology Fundamentals", UCI</i>	Summer 2021 Remote
<ul style="list-style-type: none"> <li>• Designed the content structure, assignments, discussions, exams, grading metrics, and supervised TA activities</li> <li>• Gave accumulated 4.5 h-long weekly lectures to 52 undergraduate students on in-depth general psychology topics, including learning, memory, motivation, thought processes, emotion, language, intelligence, and development</li> </ul>	
<b>Social Sciences Instructional Fellow</b> <i>School of Social Sciences, UCI</i>	Summer 2020 Irvine, CA
<ul style="list-style-type: none"> <li>• Trained in online teaching through UCI Division of Teaching Excellence and Innovation</li> <li>• Assisted Prof. Virginia M. Richards in transitioning course "Perception and Sensory Processes" to remote teaching</li> </ul>	
<b>Teaching Assistant</b> <i>"Human, Place and Space", UCSB (taught by Dr. Elizabeth R. Chrastil)</i>	Spring 2018
<i>"Human, Place and Space", UCSB (taught by Dr. Lumari Pardo-Rodriguez)</i>	Winter 2018
<i>"Human, Place and Space", UCSB (taught by Dr. Daniel Montello)</i>	Fall 2017
<i>"Cognition", Dartmouth College (taught by Dr. William M. Kelley)</i>	Spring 2016



## MENTORING

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### UCI

Graduate Division Graduate InterConnect (GIC) Program. 18 first-year international graduate students.	2021 - 2022
School of Social Sciences Cascading Mentorship Program. 6 Cognitive Sciences Ph.D. students	2021 - 2022
CNLM Summer Journal Club Mentorship Program. 4 high school students	2020 Summer
Irvine Brain Bee. 3 high school students	2020 Winter
Spatial Neuroscience Lab. undergraduate student researchers (2 students/year)	2019 - 2022

### UCSB

Summer Research Mentorship Program (RMP). 1 high school student	2018 Summer
Women in STEM Mentorship Program. 1 STEM major female undergraduate student	2017 - 2018
Spatial Neuroscience Lab. undergraduate student researchers (1 student/year)	2017 - 2019

### Other

Neuromatch Academy 2022 - Computational Neuroscience Project Mentor. 10 global graduate students	2022 Summer
Cientifico Latino's Graduate Student Mentorship Initiative. 1 underrepresented undergraduate student	2020 Fall

## LEADERSHIP & OUTREACH

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<b>Colloquium Coordination Committee Member</b> <i>Department of Cognitive Sciences, UCI</i> <ul style="list-style-type: none"><li>Selected and invited speakers for weekly departmental colloquium</li><li>Organized some of the logistics of the colloquium</li></ul>	Aug. 2021 – June 2022 <i>Irvine, CA</i>
<b>Ambassador Program Adult Outreach Committee Co-Chair</b> <i>UCI Center for Neurobiology of Learning and Memory (CNLM)</i> <ul style="list-style-type: none"><li>Promoted “Health and Education” lectures on aging, lifestyle, and the brain toward Irvine senior community</li><li>Hosted virtual panels on sleep and mental health and addiction and mental health</li></ul>	Oct. 2019 – Dec. 2021 <i>Irvine, CA</i>
<b>Augmented Reality Sandbox Operator</b> <i>Department of Geography, UCSB</i> <ul style="list-style-type: none"><li>Displayed augmented reality sandbox during departmental outreach events to a various of audience including k-12 students, undergraduate students and their parents, graduate students, and faculty</li></ul>	Jan. 2019 – Sept. 2019 <i>Santa Barbara, CA</i>
<b>Geography Outreach Group Member</b> <i>Department of Geography, UCSB</i> <ul style="list-style-type: none"><li>Organized Geography Awareness Week: connect graduate students and professors from UCSB to give geography-related lectures to local K-12 schools</li><li>Organized geography outreach classes on remote sensing at Tech Savvy: teaching girls in grades six through nine to explore STEM education and related careers</li><li>Promoted Annual Geography Trivia Night</li></ul>	Sept. 2017 – Sept. 2019 <i>Santa Barbara, CA</i>

## RELEVANT INTERNSHIPS

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<b>Data Science Instructor for Guided Projects</b> <i>Coursera Inc.</i> <ul style="list-style-type: none"><li>Created hands-on data science courses in R and Python with global learners</li><li>Published data science instructor on Coursera <u><i>You (Lilian) Cheng</i></u></li></ul>	Aug. 2020 – Feb. 2022 <i>Remote</i>
<b>Machine Learning Research Intern</b> <i>Max Planck Institute for Software Systems</i> <ul style="list-style-type: none"><li>Researched projects related to machine learning and the human mind</li><li>Proposed implementable cognitive models for online navigation programming games from Code.org</li></ul>	Aug. 2021 – Oct. 2021 <i>Remote</i>
<b>Teaching Assistant</b> <i>Neuromatch Academy Inc. - a worldwide online computational neuroscience summer school</i> <ul style="list-style-type: none"><li>Provided feedback to evaluate and improve course material as a pre-pod member</li><li>Taught 10 students across the world online about applying computational methods (e.g., general linear model, dimensionality reduction, dynamic systems, etc.) to neuroscience research using python</li></ul>	June 2020 – July 2020 <i>Remote</i>

**Data Science Intern**

June 2019 – Sept. 2019

*National Center for Ecological Analysis and Synthesis (NCEAS)**Santa Barbara, CA*

- Conducted network analyses on publication and citation over 4 decades in 28 national research sites by extracting data from API (crossref) using R and Python
- Hosted 3 workshops to diverse groups on learning newly developed R functions

**Instructor in Psychology**

Sept. 2013 – Nov. 2013

*Guangzhou 10th Middle School**Guangzhou, China*

- Taught psychology to two eighth-grade classes
- Counseled middle school students on issues on anxiety and high school entrance examination
- Organized Psychology Activity Month, including two group training for students from seventh and eighth grades

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**RELEVANT SKILLS**

**Quantitative Skills:** Mathematical Statistics & Probability, Psychology Measurement & Statistics, Big Data Analysis, Discrete Mathematics, Machine Learning, Neural Networks, Linear Algebra, Time Series, Spatial Analysis, Network Analysis, Cognitive Robotics, Statistics in fMRI Data Analysis, Text Mining, Reinforcement Learning

**Brain Analysis Technology:** fMRI (FSL, AFNI, SPM, Jupyter Notebook), ERP (Brain Voyager), tDCS

**Robot Simulation Technology:** Webots (Python, MATLAB, C)

**Virtual Reality Technology:** World Vizard, Sketch Up, Blender, 3D Max

**Spatial Analysis Technology:** ArcGIS

**Web Design Skills:** Wordpress, Drupal, CSS, R, Jupyter Notebook, Github

**Online Teaching Skills:** Zoom, Yuja, Rhyme

**Programming Skills:** Python, Spark (SparkR, PySpark), MATLAB, R, SQL, SDL (Presentation), E-Basic (E-Prime), PsychoPy, LaTeX

**Statistics Skills:** R, SPSS

**Language Skills:** Mandarin (native), English (fluent), Cantonese (conversational), Spanish (entry)

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**SELECT TRAININGS & CERTIFICATIONS****Modeling & Computing**

2021 ALCF AI for Science Training Series. *Virtual, Argonne National Laboratory*

2021 Neurohackademy Summer School. *eScience Institute, University of Washington*

2021 Digital Scholarship Services Version Control with Git Workshop and Certification. *Virtual, UCI Library*

2021 Digital Scholarship Services Unix Workshop and Certification. *Virtual, UCI Library*

2020 3rd Robot Learning Workshop: Grounding Machine Learning Development in the Real World. *Virtual, Conference on Neural Information Processing Systems (NeurIPS)*

2020 Spiking Neural Networks Workshop, “Spiking Neural Networks as Universal Function Approximators: Learning Algorithms and Applications”. *Virtual, Dan Goodman & Friedemann Zenke*

**Data Science & Statistics**

2020 Visualizing Science with Ramin Rahni, PhD - Boot Camp and Certification. *Virtual, Biosci & GPS-STEM, UCI*

2020 Data Science Workshop, “Data Science for Social Good (DS4SG)”. *Virtual, Georgia Tech Univ.*

2020 Statistics Workshop, “Beyond Statistical Significance: Finding Meaningful Effects”. *Virtual, NIH*

2019 Statistics Summer School, Methods University. *UCSB*

2018 Statistics Summer School, Methods University. *UCSB*

2018 Statistics Workshop, “Bren Quantitative Workshop”. *UCSB*

**Public Speaking & Science Communication**

2021 Communicating Science Conference for Graduate Students (ComSciCon). *Virtual, ComSciCon-LA*

2021 Industry Insights for STEM Scientists Program and Certification. *Virtual, UCI-GPS STEM*

2020 Public Speaking Program and Certification by Activate to Captivate. *Virtual, Graduate Division, UCI*

2020 Science Communication Skills for STEM Scientists - Boot Camp. *Virtual, UCI-GPS STEM*

2020 Science Communication Workshop, “The Fundamentals of SciComm”. *Virtual, Scientistt Team*

## **Psychology & Neuroscience**

2022 Mental Health First Aid Program and Certification. *Virtual, National Council for Mental Wellbeing*

2020 Oxford Autumn School in Neuroscience. *Virtual, University of Oxford*

2019 Object Perception, Attention, and Memory Anniversary Workshop. *Montreal, Quebec, Canada*

2018 Object Perception, Attention, and Memory Anniversary Workshop. *New Orleans, LA, USA*

2013 Psychology Summer School. *Department of Psychology, Peking University (1 of 37 selected nationally)*

2013 Psychology Summer School. *Institute of Psychology, Chinese Academy of Sciences (1 of 50 selected nationally) (Declined)*

## **Virtual Reality**

2018 Virtual Reality Workshop, “Virtual Environments as Geo/Spatial Labs”. *Tübingen, Germany*

2018 Virtual Reality Workshop, “Spatial Navigation Interfaces for Immersive Environments”. *Tübingen, Germany*

## **Academic**

2021 Prepare for a Faculty Career Program and Certification. *Graduate Division, UCI*

2021 Cascading Mentorship Certificate. *School of Social Sciences, UCI*

2021 Improv for Teaching Program and Certification by Activate to Captivate. *Graduate Division, UCI*

2020 Focus on Peer Review Certificate. *Nature Masterclasses*

2020 Mentoring Excellence Certificate. *UCI Graduate Division*

2020 Course Design Certificate. *UCI Division of Teaching Excellence and Innovation*

2020 Teaching Assistant Certificate. *Neuromatch Academy*

2014 Chinese Teacher’s License (Psychology and Education). *South China Normal University*

## **PROFESSIONAL MEMBERSHIPS**

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Alzheimer’s Association International Society to Advance Alzheimer’s Research and Treatment (ISTAART)	2022
American Association for the Advancement of Sciences (AAAS)	2020
Cognitive Neuroscience Society	2020
Orange County R Users Group (OCRUG)	2020
Women in AI (WAI)	2020
Women in Machine Learning (WiML)	2020
R-Ladies Global	2020
Woman Techmakers	2020
UCI Graduate Professional Success in STEM (GPS-STEM)	2020
UCI Center for the Neurobiology of Learning & Memory (CNLM)	2019
Women in Cognitive Science (WiCS)	2018
Psychonomic Society	2018
R-Ladies Santa Barbara	2018
Society for Neuroscience	2015
Vision Science Society	2015