Grace Qiyuan Miao

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EDUCATION

University of California, Los Angeles (UCLA) Los Angeles, CA
Ph.D. in Communication & Social Neuroscience | GPA: 3.92/4.00 Sep 2021 - Present
Advisors: Dr. Rick Dale, Dr. Francis Steen, Dr. Matthew Lieberman & Dr. Tanya Stivers
Research area: multimodal dynamics of interpersonal communication (conversational, behavioral & neurocognitive)

Columbia University New York, NY
Master of Social Work, Specialization in Gerontology | GPA: 3.90/4.00 Sep 2019 - Apr 2021

University of California, Los Angeles (UCLA) Los Angeles, CA
Bachelor of Arts in Communication Studies, Specialization in Computing Sep 2016 - Jun 2019
With Departmental Highest Honors & Dean's Honors List | GPA: 3.81/4.00

AWARDS & RECOGNITIONS

UCLA Department of Communication – Communication Research Merit Award (2024)
University of California, Los Angeles – Summer Mentored Research Fellowship (2024)
International Communication Association – Top Paper in Instructional and Development Communication (2023)
University of California, Los Angeles – Graduate Summer Research Fellowship (2023)
University of California, Los Angeles – Graduate Summer Research Fellowship (2022)
Columbia University School of Social Work – YC Wu Scholarship (2019-2020)
Research Conference on Aging (RCOA) – Best Poster Presentation for Social Research, Policy and Practice (2019)
UCLA Undergraduate Research Center – Undergrad Research Scholars Fellowship (2018-2019)
LA Hacks – Best Use of Google Cloud Platform (2018)

PUBLICATIONS

Miao, G.Q., Jiang, Y.J., Binnquist, A., Pluta, A., Steen, F.F., Dale, R., & Lieberman, M.D. (2024). A Deep Neural Network Approach for Integrating Neural and Behavioral Signals: Multimodal Investigation with fNIRS Hyperscanning and Facial Expressions. In L. K. Samuelson, S. Frank, M. Toneva, A. Mackey & E. Hazeltine (Eds.), *Proceedings of the 46th Annual Meeting of the Cognitive Science Society.* Austin, TX: Cognitive Science Society.

Miao, G.Q., Dale, R., & Galati, A. (2023). (Mis) align: a simple dynamic framework for modeling interpersonal coordination. *Scientific Reports, 13*(1), 18325. https://www.nature.com/articles/s41598-023-41516-4

Miao, G.Q., Dale, R. & Galati, A. (2022). A Simple Linear Model for Exploring Synchrony and Complementarity in Interpersonal Coordination. In *Proceeding at the 32nd Annual Meeting of the Society for Text and Discourse*. https://easychair.org/publications/preprint/QD1s

Manuscripts Under Review

Miao, G.Q. & Stivers. T. (Under Review). *Activity transitions and persuasion: Using growth charts in pediatric consultations*.

Dale, R., Bainbridge, C., Jiang, Y., Lin, L., **Miao, G.** & Rosen, Z. (Under Review). *Bridging Cognition and Communication: Identifying Opportunities for Cross-Disciplinary Connections Using Scientometric Techniques.*

Manuscripts In Preparation

Miao, G.Q.*, Lieberman, I.*, Binnquist, A., Pluta, A. & Dale, R. (in prep). *Conversation depth and connection: An fNIRS study of neural synchrony in the default mode network.*

Miao, G.Q., Pluta, A. & Lieberman, M.D. (in prep). *Hyperscanning With Functional Near Infrared Spectroscopy (fNIRS) In Social Interaction Studies – Systematic Review and Best Practice Recommendations*.

Miao, G.Q., Lee, A.J., Lu, H., Dale, R. & Galati, A. (in prep). *Collaboration over time as Iterative Bayesian Inference within a Dynamical Systems Model*.

Miao, G.Q., Cox, K. & Stivers. T. (in prep). *Decoding Rapport Building: Risky Stance Taking Among Stranger Dyads*.

Horton, C.J., **Miao, G.Q.**, Walsh, L.C. & Kaufman, V.A. (in prep). *Best friends forever: predictors, correlates, and outcomes of best-friend selection in a large sample survey study*

Steen, F., DeLiema, D. & **Miao, G.Q**. (in prep). *"Remember… you can always just": Approaching the Zone of Proximal Development.*

CONFERENCES & INVITED TALKS

Miao, G.Q., Jiang, Y.J., Binnquist, A., Pluta, A., Steen, F.F., Dale, R., & Lieberman, M.D. (2024). How do brains and body language align during conversations? An fNIRS hyperscanning investigation with deep neural network (DNN) analyses of multimodal dynamics. In-person talk given at the 16th annual conference of the Social & Affective Neuroscience Society (SANS), Toronto, Canada.

Miao, G.Q., Jiang, Y.J., Binnquist, A., Steen, F.F., Dale, R., & Lieberman, M.D. (2023). Shallow or Deep Conversation? Understanding the Multimodal Dynamics of Interpersonal Connection. In-person talk given at the 53rd annual meeting of the Society for Computation in Psychology (SCiP), San Francisco, CA.

Miao, G.Q., Lee, A.J., Lu, H., Dale, R. & Galati, A. (2023). Collaboration over time as Iterative Bayesian Inference within a Dynamical Systems Model. Poster presented at the 53rd annual meeting of the Society for Computation in Psychology (SCiP), San Francisco, CA.

Miao, G.Q., Jiang, Y.J., Binnquist, A., Steen, F.F., Dale, R., & Lieberman, M.D. (2023). Shallo or Deep Conversations? fNIRS Hyperscanning Towards Multimodality – An Explorative Study. In-person talk given at the 16th International Congress of the Polish Neuroscience Society, Toruń, Poland.

Pluta, A. & **Miao, G.Q.** (2023). *Neurocognitive mechanisms of theory of mind: Lessons learnt from studies on mentalizing in neurotypical and neuroatypical populations*. In-person talk given at the Emotion and Social Cognition Lab (PI: Ralph Adolphs) at California Institute of Technology. Virtual talk given at the Motivation and Cognition Neuroscience Lab (PI: Yuan Chang Leong) at University of Chicago.

Miao, G.Q., Dale, R. & Galati, A. (2023). *Criteria for Success in Modeling Interpersonal Processes*. In-person talk given at the 73rd Annual International Communication Association (ICA) Conference Modeling and Analyzing User Interactions Session.

Steen, F., DeLiema, D. & **Miao, G.Q**. (2023). "Remember...You Can Always Just": Approaching the Zone of Proximal Development. In-person talk given at the 73rd Annual International Communication Association (ICA) Conference Top Papers in Instructional and Development Communication Session.

Miao, G.Q. & Stivers. T. (2023). *How Physicians Use a Baby's Growth Chart in Routine Pediatric Visits*. In-person talk given at the 26th Annual Conference on Language, Interaction, and Social Organization (LISO).

Miao, G.Q., Dale, R. & Galati, A. (2022). *A Simple Linear Model for Exploring Synchrony and Complementarity in Interpersonal Coordination.* Talk given at the 32nd Annual Meeting of the Society for Text and Discourse.

Miao, G.Q. & Stivers. T. (2022). *How Physicians Use a Baby's Growth Chart in Routine Pediatric Visits*. Talk given at the 117th Annual Meeting of American Sociological Association (ASA), Los Angeles, CA.

Wang, T., Liu, D., **Miao, G.Q**. & Xiao, F. (2022). *Complexity theory in speech visualization: Integrating theory, software development and language teaching.* Keynote presentation at American Association for Applied Linguistics (AAAL) Conference, Pittsburg, PA.

Steen, F., DeLiema, D. & **Miao, G.Q**. (2020). *Designing an Intelligent Tutor.* Keynote presented at the Artificial Intelligence Research (AIR) Conference, Los Angeles, CA.

Miao, G.Q. & Levy-Storms, L. (2019). *'How Much Can You Care?' Emotional Connections and Responses during Dementia Care.* Poster presented at the annual Research Conference on Aging (RCOA), Los Angeles, CA. Keynote presented at the UCLA Undergrad Research Scholars Symposium, Los Angeles, CA.

RESEARCH EXPERIENCE

UCLA Social Cognitive Neuroscience Laboratory — Los Angeles, CA
PhD Student Researcher — Nov 2021 – Present

- Designed experiment and led research team to investigate neurocognitive activities of shallow vs. deep conversations using functional near infrared spectroscopy (fNIRS) and intersubject correlation (ISC) analysis
- Co-designed experiment to investigate the neural and behavioral dynamics of teams among various leadership styles (elected leader, assigned leader, and no leader) using fNIRS supervised by Dr. Matthew Lieberman

UCLA Co-Mind Lab — Los Angeles, CA
National Science Foundation PhD Student Researcher — Oct 2021 – Present

- Researched in the Identifying Multimodal Signatures of Coordination to Understand Joint Performance in Diverse Tasks NSF project supervised by Dr. Rick Dale and Dr. Alexia Galati
- Simulated alignment and complementarity in dyadic interactions through computational modeling methodologies
- Visualized model outputs via cross reference quantification analysis (CRQA) package for tractable interpretations, aiming to understand fundamental cognitive processes in human verbal communication and eye movements

Harvard Medical School Boston, MA
Graduate Research Assistant Oct 2020 – Jan 2021
- Researched on age effect in brain domains by analyzing resting-state functional MRI (fMRI) data in MATLAB packages SPM and GIFT using independent component analysis (ICA) supervised by Dr. Yanmei Tie

UC Berkeley Embodied Design Research Laboratory Los Angeles, CA
National Science Foundation Student Researcher Jun 2019 – Jan 2021
- Researched in the Debugging Failure: Fostering Youth Academic Resilience in Computer Science NSF project, collaboration between UC Berkeley, UCLA, and 9 Dots (EdTech nonprofit) supervised by Dr. David DeLiema
- Collected and edited video data during 9 Dot's summer programming camp for 4th and 5th Grade students
- Generated detailed transcripts regarding debugging using multimodal and conversation analysis (CA) techniques
- Edited and submitted annual report summary to National Science Fund (NSF)

Columbia University School of Social Work New York, NY
Graduate Research Assistant Sep 2019 – Mar 2020
- Researched on the wisdom of Chinese dementia caregivers in New York City supervised by Dr. Jinyu Liu
- Conducted qualitative coding of existing interview transcripts and developed synthesis forms of relevant conversations based on the MORE (Mastery, Openness, Reflectivity, and Empathy) Wisdom Model
- Performed clinical field work at Dementia Day Care section of Riverdale Senior Services in Bronx, NY

UCLA Social Welfare Department Los Angeles, CA
Undergraduate Honors Researcher Sep 2018 – Jun 2019
- Researched on dyadic interactions between older adults with dementia and certified nurse-aids in nursing homes via conversation analysis methodology and descriptive statistics, supervised by Dr. Lené Levy-Storms
- Working paper: *'How Much Do You Care' Emotional Connection and Responses during Dementia Care*
- Awarded $5,000 undergraduate research fund by Virginia Gandy Scholarship Fund

UCLA Communication Department NewsScape Library Los Angeles, CA
Data Management Research Assistant Nov 2017 – Jun 2019
- Sorted and recorded 50+ global television channels by Unix cron scheduler supervised by Dr. Francis Steen
- Organized the database, updated channels schedules, and reported system glitches to support multimodal research
- Pre-processed news data for FrameNet, a natural language processing (NLP) project developed by UC Berkeley
- Created a user handbook with workflow outline and examples to standardize procedure and facilitate teamwork

USC Annenberg Center for the Digital Future Los Angeles, CA
Data Visualization Intern Sep 2017 – Feb 2018
- Designed infographics synthesizing ads viewership and mobile banking data for improving viewer experience
- Synthesized data of the effects of new communication technology and edited reports on global internet usage

TEACHING EXPERIENCE

UCLA Comunication Department *Teaching Assistant* Los Angeles, CA
Professors: Francis Steen, Tao Gao, Raffi Kassabian Sep 2022 – Present
Courses: COMM133 Decoding Media Strategies
COMM154 Social Communication and New Technology
COMM188C Artificial Intelligence and Society
COMM101 Freedom of Communication

SKILLS & INTERESTS

- Languages: Fluent in Mandarin, Cantonese, and English
- Computing Skills: R, SPSS, FSL, bash, Qualtrics, Matlab, Gephi, NVivo, C++, HTML, CSS, and Microsoft Office
- Design Skills: Adobe Illustration, Adobe Photoshop, and Adobe Premiere
- Interests: snowboarding, rock climbing, A Cappella, cooking, gastronomy, gourmet photography, traveling