Grace Qiyuan Miao

q.miao@ucla.edu | http://gracemiao.com | github.com/miaoqy0729

EDUCATION

University of California, Los Angeles (UCLA) — Los Angeles, CA
Ph.D. in Communication & Social Neuroscience | GPA: 3.95/4.00 — Sep 2021 - Present
Advisors: Dr. Rick Dale, Dr. Matthew Lieberman, Dr. Francis Steen & Dr. Tanya Stivers
Dissertation: *Decoding Interpersonal Connections: Investigating Neurocognitive and Interactive Dynamics Underlying Human-Human and Human-AI Conversations*

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

Summit View Research Foundation – Foundation Support for 3-Day Workshop (Organizer: Grace Miao) 2024
UCLADepartment 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

JOURNAL PUBLICATIONS

Goldstein, B.M., Pluta, A., **Miao, G.Q.**, Binnquist, A.L. & Lieberman, M.D. (2025). Multi-timepoint pattern analysis (MTPA): Improving classification with neural timeseries data. *Social Cognitive And Affective Neuroscience*, nsaf058.

Miao, G.Q., & Stivers. T. (2025). Activity transitions and persuasion: Using growth charts in pediatric consultations. *Discourse & Communication*, *19*(4), 658-675.

Miao, G.Q., Dale, R., & Galati, A. (2023). (Mis) align: a simple dynamic framework for modeling interpersonal coordination. *Scientific Reports, 13*(1), 18325.

CONFERENCE PROCEEDINGS

Miao, G.Q., Trujillo J., Bulls L. S., Thornton M. A., Dale R., & Pouw W. (2025). DIMS Dashboard for Exploring Dynamic Interactions and Multimodal Signals. In A. Ruggeri, D. Barner, C. Walker, & N. Bramley (Eds.), *Proceedings of the 47th Annual Conference of the Cognitive Science Society* (pp. 1023-1030). San Francisco, CA: Cognitive Science Society.

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 45th Annual Meeting of the Cognitive Science Society* (pp. 5630-5638). Austin, TX: Cognitive Science Society.

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 Society for Text and Discourse*, #8465.

MANUSCRIPTS UNDER REVIEW

Miao, G.Q.*, Lieberman, I.*, Binnquist, A., Pluta, A., Goldstein, B.M., Dale, R., & Lieberman, M.D. (Under Review). *Making new connections: An fNIRS machine learning classification study of neural synchrony in the default mode network. bioRxiv.*

Miao, G.Q., Lieberman, M.D., & Pluta, A. (Under Review). *Current needs and future directions of functional near-Infrared spectroscopy (fNIRS) hyperscanning for social interaction research. PsyArXiv*.

Lee, A.J., **Miao, G.Q.**, Dale, R., Galati, A., & Lu, H. (Under Review). *A Bayesian Dynamical System Model of Joint Action and Interpersonal Coordination. arXiv*.

Rosen, Z.P., Bainbridge, C., **Miao, G.Q.**, & Dale, R. (Under Review). *Quantifying the dynamics of common ground.*

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. PsyArXiv*.

MANUSCRIPTS IN PROGRESS

Horton, C.J., Tissera, H., **Miao, G.Q.**, Walsh, L.C., Rodriguez, A. & Kaufman, V.A. (Manuscript near submission). *Who's Your (Best) Friend? A Latent Profile Analysis of Best Friendship and Well-Being for Married Individuals.*

Miao, G.Q., Rosen, Z.P., Dale, R., & Li, Y. (Manuscript in development). *Converging Misalignment: Neural and Semantic Insights about Conversational Depth and Stranger Bonding.*

Miao, G.Q., Jiang, Y.J., Binnquist, A., Pluta, A., Steen, F.F., Dale, R., & Lieberman, M.D. (Manuscript in development). *Multimodal Dynamics of Social Interaction: A Deep Neural Network Integration of fNIRS Hyperscanning and Facial Expressions.* Intended for submission to *Nature Human Behaviour.*

Miao, G.Q., Cox, K. & Stivers. T. (Manuscript in development). *Getting To Know You, Stranger: Interactional Risk in Assessments*.

Miao, G.Q., Dale, R., & Cooney, G. (Manuscript in development). *Dynamic Dimensional Analysis of a Large Conversation Corpus.*

Binnquist, A.L., Dolbier, S., **Miao, G.Q.**, Dieffenbach, M., Tabak, B., Muldowney, S., & Lieberman, M.D. (Manuscript in development). Brain state dynamics of cross-ideological communication and interpersonal bonding.

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

CONFERENCES & INVITED TALKS

Miao, G.Q. (2025). *How Do People Form Meaningful Connections? Investigating the Neuorocognitive and Interactional Dynamics of Conversation*. Invited in-person talk given at the Conversation Focus Group, Donders Institute for Brain, Cognition, and Behaviour, Nijmegen, Netherlands. https://www.ru.nl/en/donders-institute/agenda/donders-conversation-focus-group-talk-by-grace-miao

Miao, G.Q. (2025). *How Do People Form Meaningful Connections? Investigating the Neuorocognitive and Interactional Dynamics of Conversation*. Invited in-person talk given at the Research Center for Cognitive Science and Artificial Intelligence, Tilburg University, Tilburg, Netherlands.

Miao, G.Q. (2025). *'Yeah No, No Yeah': Analysis of Discourse Markers in Get-To-Know-You Conversations*. Invited in-person data session at the Conversation Analysis Group, Vrije Universiteit Amsterdam, Netherlands.

Miao, G.Q. (2025). *Workshop: Quantifying Multimodal Approaches to Interactions in Social Neuroscience.* Invited in-person 4-hour workshop given at the at SYNCC-IN Summer School 2025 *Caregiver-Child Biobehavioral Synchrony: Foundations, Methods, and Applications*. Heidelberg University, Germany. https://synccin.uw.edu.pl/en/summer-school-caregiver-child-biobehavioral-synchrony-foundations-methods-and-applications-2/

Miao, G.Q. (2025). Workshop: Quantifying Multimodal Approaches to Interactions in Social Neuroscience. Invited in-person 4-hour workshop given at the Faculty of Psychology, University of Warsaw, Poland. https://synccin.uw.edu.pl/en/events/workshop-quantifying-multimodal-approaches-to-interactions-in-social-neuroscience/

Miao, G.Q. (2025). *How Do People Form Meaningful Connections? Investigating the Neuorocognitive and Interactional Dynamics of Conversation*. In-person talk given at the Social Interaction Lab (PI: Robert Hawkins) at Stanford University, CA.

Miao, G.Q. Trujillo J., Bulls L. S., Thornton M. A., Dale R., & Pouw W. (2025). DIMS Dashboard for Exploring Dynamic Interactions and Multimodal Signals. In-person talk given at the 47th Annual Meeting of the Cognitive Science Society, San Francisco, CA.

Miao, G.Q., Rosen, Z.P., Binnquist, A., Dale, R., & Lieberman, M. (2025). *Converging misalignment: Neural and semantic insights about same- vs. mixed-gender communication accommodation*. In-person talk given at the 75th Annual Conference of the International Communication Association, Denver, CO.

Miao, G.Q. (2025). *Getting to Know You, Stranger: A Multimodal Hyperscanning fNIRS Study of Conversation*. In-person talk given at the Princeton Workshop on Naturalistic Conversation, Princeton University, NJ.

Miao, G.Q., Trujillo J., Bulls L. S., Thornton M. A., Dale R., & Pouw W. (2025). *DIMS Dashboard: A Tool for Interdisciplinary, Multidimensonal, and Dynamic Analysis of Human Interaction*. In-person talk given at the Princeton Workshop on Naturalistic Conversation, Princeton University, NJ.

Miao, G.Q., Rosen, Z.P., Binnquist, A., Dale, R., & Lieberman, M. (2025). *Converging Misalignment: Neural & Semantic Insights about Same- vs. Mixed-gender communication accommodation*. In-person poster presented at the 17th annual conference of the Social & Affective Neuroscience Society (SANS), Chicago, IL.

Miao, G.Q. (2025). *Beyond human: Feeling connected with AI.* Guest lecture presented at COMM 131 - Computer Models of Communicators, Department of Communication, UCLA, CA.

Miao, G.Q. (2025). *Introduction to Functional Near Infrared Spectroscopy*. Guest lecture presented at PSYCH 298 – Neuroeconomics, Department of Psychology, UCLA, CA.

Miao, G.Q., Cox, K., & Stivers., T. (2025) Getting to Know You, Stranger: Interactional Risk in Assessments. Presentation given at the Conversation Analysis Working Group, Department of Sociology, UCLA, CA.

Miao, G.Q., Jiang, Y.J., Binnquist, A., Pluta, A., Steen, F.F., Dale, R., & Lieberman, M.D. (2024). *A Deep Neural Network (DNN) Approach for Integrating Neural and Behavioral Signals: Multimodal Investigation with fNIRS Hyperscanning and Facial Expressions.* Virtual presentation given at the 45th Annual Meeting of the Cognitive Science Society, Rotterdam, Netherlands.

Miao, G.Q., Jiang, Y.J., Binnquist, A., Pluta, A., Steen, F.F., Dale, R., & Lieberman, M.D. (2024). *Shallow or Deep Conversations? A Functional Near-Infrared Spectroscopy (fNIRS) Hyperscanning Study Towards Multimodal Integration.* Virtual talk given at the 74th Annual International Communication Association (ICA) Conference, Hybrid High-Density Presentation: Individual Differences, Expression, and Social Connection Session, Gold Coast, Australia.

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, CA.

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

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, Toronto, Canada.

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, Toronto, Canada.

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), Santa Barbara, CA.

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
PhD Student Researcher on NSF Grant 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
Undergraduate Student Researcher on NSF Grant 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

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 Departments of Communication and Sociology *Teaching Assistant* Los Angeles, CA
Professors: Francis Steen, Tao Gao, Raffi Kassabian, Tanya Stivers, Michael Suman Sep 2022 – Present
Courses:

- COMM158 Python for Social Science
- COMM188C Artificial Intelligence and Society
- COMM154 Social Communication and New Technology
- COMM133 Decoding Media Strategies
- COMM101 Freedom of Communication
- SOCIO140 Negotiating Medical Care

UCLA Departments of Communication and Sociology *Instructor* Los Angeles, CA
Course: Summer 2025

- COMM115 Interpersonal Dynamics

SERVICE EXPERIENCE

Dynamic Interactions and Methodologies Symposium (DIMS) (gracemiao.com/dims/) Los Angeles, CA
Sole Fund Raiser Oct 2024
Organizer and Designer
Chief Conference Coordinator

UCLA Underrepresented Graduate Students in Psychology (UGSP) Los Angeles, CA
Panelist for Undergraduate Outreach Workshop on FindingPost-Bac Opportunities Feb 2024

UCLA Chinese Students and Scholars Association (CSSA) Los Angeles, CA
Panelist for CSSA Spring Grad School Panel May 2023

UCLA Graduate Student Orientation (GSO) Los Angeles, CA
Panelist at New Grad Community Day Sep 2022

UCLA Undergrad Research Center Los Angeles, CA
Author for Student Reflection Article Jun 2019

UCLA Undergrad Career Center Los Angeles, CA
Student Panelist for Workshop on Finding Research Opportunities for Humanities Majors Feb 2019

ACADEMIC SERVICE EXPERIENCE

Reviewed for journals:

- Social Cognitive and Affective Neuroscience (SCAN)
- PLOS One
- Health Communication
- Cogent Arts & Humanities

Reviewed for conferences:

- International Communication Association (ICA)
- Cognitive Science Society (CogSci)
- ACM (Association of Computing Machinery) CHI conference on Human Factors in Computing Systems

SKILLS & INTERESTS

- Languages: Fluent in Mandarin, Cantonese, and English
- Computing Skills: R, Python, Matlab, Qualtrics, PsychoPy, Gephi, NVivo, HTML, CSS, and Microsoft Office
- Design Skills: Adobe Illustration, Adobe Photoshop, and Adobe Premiere
- Interests: snowboarding, aerial sports, A Cappella, cooking, gastronomy, gourmet photography, traveling