Yuexin (Rachel) Li

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EDUCATION

Columbia University   New York, NY
Master of Science in Applied Analytics   Fall 2021 – Fall 2022
GPA: 3.8/4.0

Syracuse University   Syracuse, NY
Bachelor of Arts in Psychology, Bachelor of Science in Accounting   Fall 2017 – Spring 2021
GPA: 3.42/4.0; Honors: Cum Laude

RESEARCH INTERESTS

Cognition and Perception, Attention, Decision Making, Psycholinguistics

RESEARCH EXPERIENCES

Language and Cognitive Neuroscience Lab   Teachers College, Columbia University
- *Research Assistant*   May 2023 – Present

Project 1: Eye-Tracking Study on Infant Event Representation
- *Supervisor: Prof. Peter Gordon*

- Developed the Machine Learning Pipeline that automated frame-by-frame annotation for eye-tracking videos.
- Conducted data analysis including using visualization (e.g. heatmap, bar plots) to identify looking time cross Areas of Interests.

Project 2: Electroencephalogram (EEG) Numbers Study
- *Supervisor: Prof. Peter Gordon, Dr. Jean Tang*

- Adapted the Harvard Automated Processing Pipeline for Electroencephalography (HAPPE) method; performed cleaning, filtering, and segmentation on EEG data and sorted data according to task conditions.
- Conducted Event-Related Potentials (ERPs) analysis by generating ERP signal montages for designated brain areas (e.g., N1 over POcT; P3b over Pz).
- Merged EEG data with behavioral data and conducted statistical analyses using general linear models, correlation analysis, repeated measures ANOVA and standard error visualizations.

Project 3: Development of Numerical Cognition in Young Children
- *Supervisor: Prof. Peter Gordon*

- Assisted with video coding by capturing and coding participants' audio and behavioral responses from experiment recordings.
- Performed statistical analyses (t-tests, correlation analysis) on data from 84 Mandarin-speaking children and generated result visualizations; compared outcomes with a previous study on English-speaking children.

Project 4: Mental State Verb Learning and Theory of Mind in Mandarin-Speaking Children
- *Supervisor: Prof. Peter Gordon*

- Developed analytical methods and analyzed data from 30 Mandarin-speaking children using t-tests, one-way ANOVA, and general linear models; created visualization plots.
- Assisted with video coding and data compilation.

TEACHING EXPERIENCES

R Tutor | Language and Cognitive Neuroscience Lab   Oct. 2024 – Present

- Conducted weekly/bi-weekly R training sessions to equip research assistants with skills for data visualization and statistical analysis.

Accounting Tutor | Beta Alpha Psi (Honor Society for Accounting)   Fall 2020

- Held weekly tutoring sessions for students in introductory accounting courses; coordinated with accounting professors to ensure that tutoring materials were current and relevant.

MANUSCRIPT IN PREPARATION

Tang, J. E., **Li, Y.**, Smith, P., Olivares, A. G., Mantaro, E. R., Kirby, E., Bisbee, N., Gordon, P.
The Neurobehavioral Basis of the Parallel Individuation (PI) and Approximation Number System (ANS)

CONFERENCES

Gushiken, M., **Li, Y.**, Tang, J. E., Gordon, P. (2025, March, April). **Eye-Track-ML: A Machine Learning Pipeline for Automated Frame-by-Frame Coding of Eye-Tracking Videos**. Poster presented at the 2025 Columbia AI Summit and 2025 Columbia Data Science Day.

Tang, J. E., **Li, Y.**, Smith, P., Olivares, A. G., Mantaro, E. R., Kirby, E., Bisbee, N., Gordon, P. (2024, October). **Effects of Change Direction and Size on ERP Signatures of Small vs. Large Numerical Perception**. Poster presented at the 2024 APS Global Psychological Science Summit.

Tang, J. E., **Li, Y.**, Kang, Y., Lin, N., Pei, P., Ye, H., Jin, L., Wang, E., Chang, Y., Liu, T., Zhou, X., Gordon, P. (2024, October). **Numerical Cognition in Mandarin-Speaking 2-to-4-Year-Olds in China**. Poster presented at the 2024 APS Global Psychological Science Summit.

Chang, Y., **Li, Y.**, Gao, S., Liu, T., Liu, H., Gordon, P. (2024, May). **Mental State Verb Learning and Theory of Mind in Mandarin-Speaking Children**. Poster presented at the 2024 Association for Psychological Science Annual Convention.

PROFESSIONAL EXPERIENCE

VisionX LLC   New York, NY
- *Data Scientist Intern*   Feb. 2024 – Jun. 2024

- Assisted in improving and training advanced stock trading AI models for the data science application team.
- Enhanced data collection procedures by ensuring the acquisition of relevant information for analytics systems; processed, cleaned, and verified data integrity.

Museum of Reclaimed Urban Space   New York, NY
- *Analytical Assistant/Website Designer*   May 2023 – Feb. 2024

- Researched and quantified the positive environmental impact of organizations in New York City (e.g., number of community gardens preserved and their local impact).
- Edited and updated the organization's website by refreshing event details, updating content, and embedding multimedia elements.

PricewaterhouseCoopers (PwC) China   Shanghai, China
- *Consulting Intern*   Summer 2019

- Conducted tests and recorded the results of new programs developed by AI teams; documented errors, evaluated performance, and generated process reports.

SKILLS

Programming Languages: R, Python, PostgreSQL, MATLAB
Software and Tools: LaTeX, WordPress, CodePen, Microsoft Office