



Yuan Zhang

Basic Life Research Scientist, Psych/Major Laboratories and Clinical & Translational Neurosciences Incubator

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CURRENT ROLE AT STANFORD

Basic Life Research Scientist

EDUCATION AND CERTIFICATIONS

- PhD, Peking University , Psychology
- BEng, Beijing University of Technology , Computer Science

Publications

PUBLICATIONS

- **Deep learning models reveal replicable, generalizable, and behaviorally relevant sex differences in human functional brain organization.** *Proceedings of the National Academy of Sciences of the United States of America*
Ryali, S., Zhang, Y., de Los Angeles, C., Supekar, K., Menon, V.
2024; 121 (9): e2310012121
- **Anxiety and Stress Alter Decision-Making Dynamics and Causal Amygdala-Dorsolateral Prefrontal Cortex Circuits During Emotion Regulation in Children.** *Biological psychiatry*
Warren, S. L., Zhang, Y. n., Duberg, K. n., Mistry, P. n., Cai, W. n., Qin, S. n., Bostan, S. N., Padmanabhan, A. n., Carrion, V. G., Menon, V. n.
2020
- **Development of human emotion circuits investigated using a Big-Data analytic approach: Stability, reliability, and robustness.** *The Journal of neuroscience : the official journal of the Society for Neuroscience*
Zhang, Y., Padmanabhan, A., Gross, J. J., Menon, V.
2019
- **Intention Modulates the Effect of Punishment Threat in Norm Enforcement via the Lateral Orbitofrontal Cortex** *JOURNAL OF NEUROSCIENCE*
Zhang, Y., Yu, H., Yin, Y., Zhou, X.
2016; 36 (35): 9217-9226
- **Latent neurocognitive mechanisms underlying quantity discrimination in children with and without mathematical learning disabilities.** *The Journal of neuroscience : the official journal of the Society for Neuroscience*
Chang, H., Mistry, P. K., Zhang, Y., Schwartz, F., Menon, V.
2026
- **Causal dynamics of memory circuits in mathematical development from childhood to adulthood.** *Developmental cognitive neuroscience*
Liu, R., Chang, H., Zhang, Y., Menon, V.
2025; 76: 101628
- **Distinct neural representational changes following cross-format number tutoring in children with mathematical difficulties.** *NPJ science of learning*

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- Park, Y., Zhang, Y., Schwartz, F., Iuculano, T., Chang, H., Menon, V.
2025; 10 (1): 52
- **Brain-wide decoding of numbers and letters: Converging evidence from multivariate fMRI analysis and probabilistic meta-analysis.** *Cortex; a journal devoted to the study of the nervous system and behavior*
Liu, R., Chang, H., El-Said, D., Wassermann, D., Zhang, Y., Menon, V.
2025; 189: 256-274
 - **Reply to Lockhart et al.: Advancing the understanding of sex differences in functional brain organization with innovative AI tools.** *Proceedings of the National Academy of Sciences of the United States of America*
Ryali, S., Zhang, Y., Supekar, K., Menon, V.
2025; 122 (2): e2419736121
 - **Neuroanatomical, transcriptomic, and molecular correlates of math ability and their prognostic value for predicting learning outcomes.** *Science advances*
Liu, J., Supekar, K., El-Said, D., de Los Angeles, C., Zhang, Y., Chang, H., Menon, V.
2024; 10 (22): eadk7220
 - **Short-term number sense training recapitulates long-term neurodevelopmental changes from childhood to adolescence.** *Developmental science*
Park, Y., Zhang, Y., Chang, H., Menon, V.
2024: e13524
 - **Integrated number sense tutoring remediates aberrant neural representations in children with mathematical disabilities.** *bioRxiv : the preprint server for biology*
Park, Y., Zhang, Y., Schwartz, F., Iuculano, T., Chang, H., Menon, V.
2024
 - **Long-term abacus training gains in children are predicted by medial temporal lobe anatomy and circuitry.** *Developmental science*
Xie, Y., Chang, H., Zhang, Y., Wang, C., Zhang, Y., Chen, L., Geng, F., Ku, Y., Menon, V., Chen, F.
2024: e13489
 - **Cognitive training enhances growth mindset in children through plasticity of cortico-striatal circuits.** *NPJ science of learning*
Chen, L., Chang, H., Rudoler, J., Arnardottir, E., Zhang, Y., de Los Angeles, C., Menon, V.
2022; 7 (1): 30
 - **Foundational number sense training gains are predicted by hippocampal-parietal circuits.** *The Journal of neuroscience : the official journal of the Society for Neuroscience*
Chang, H., Chen, L., Zhang, Y., Xie, Y., de Los Angeles, C., Adair, E., Zanitti, G., Wassermann, D., Rosenberg-Lee, M., Menon, V.
2022
 - **Developmental Maturation of Causal Signaling Hubs in Voluntary Control of Saccades and Their Functional Controllability.** *Cerebral cortex (New York, N.Y. : 1991)*
Zhang, Y., Ryali, S., Cai, W., Supekar, K., Pasumarthy, R., Padmanabhan, A., Luna, B., Menon, V.
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 - **Linear and nonlinear profiles of weak behavioral and neural differentiation of numerical operations in children with math learning difficulties.** *Neuropsychologia*
Chen, L., Iuculano, T., Mistry, P., Nicholas, J., Zhang, Y., Menon, V.
2021: 107977
 - **Neural representational similarity between symbolic and non-symbolic quantities predicts arithmetic skills in childhood but not adolescence** *DEVELOPMENTAL SCIENCE*
Schwartz, F., Zhang, Y., Chang, H., Karraker, S., Kang, J., Menon, V.
2021
 - **Stress-induced changes in modular organizations of human brain functional networks.** *Neurobiology of stress*
Zhang, Y., Dai, Z., Hu, J., Qin, S., Yu, R., Sun, Y.
2020; 13: 100231
 - **Mental workload drives different reorganizations of functional cortical connectivity between 2D and 3D simulated flight experiments.** *IEEE transactions on neural systems and rehabilitation engineering : a publication of the IEEE Engineering in Medicine and Biology Society*
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Kakkos, I. n., Dimitrakopoulos, G. N., Gao, L. n., Zhang, Y. n., Qi, P. n., Matsopoulos, G. K., Thakor, N. n., Bezerianos, A. n., Sun, Y. n.
2019

- **Dynamic Temporal Inflexibility of the Frontoparietal Network Predicts Depression Severity and Treatment Response in Internalizing Psychopathologies**
Young, C., Chen, T., Zhang, Y., Klumpp, H., Phan, K., Menon, V.
ELSEVIER SCIENCE INC.2018: S196–S197
- **Altered intra- and inter-hemispheric functional dysconnectivity in schizophrenia.** *Brain imaging and behavior*
Zhang, Y. n., Dai, Z. n., Chen, Y. n., Sim, K. n., Sun, Y. n., Yu, R. n.
2018
- **Lateral prefrontal/orbitofrontal cortex has different roles in norm compliance in gain and loss domains: a transcranial current stimulation (tDCS) study.** *The European journal of neuroscience*
Yin, Y., Yu, H., Su, Z., Zhang, Y., Zhou, X.
2017
- **Synchronized network activity as the origin of a P300 component in a facial attractiveness judgment task** *PSYCHOPHYSIOLOGY*
Zhang, Y., Tang, A. C., Zhou, X.
2014; 51 (3): 285-289
- **Brain responses in evaluating feedback stimuli with a social dimension** *FRONTIERS IN HUMAN NEUROSCIENCE*
Zhang, Y., Li, X., Qian, X., Zhou, X.
2012; 6
- **ELECTROENCEPHALOGRAM OSCILLATIONS DIFFERENTIATE SEMANTIC AND PROSODIC PROCESSES DURING SENTENCE READING** *NEUROSCIENCE*
Luo, Y., Zhang, Y., Feng, X., Zhou, X.
2010; 169 (2): 654-664