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Postdoctoral Experiences

2017 - 2019 Postdoc, Stanford Brain Stimulation Laboratory, Stanford, CA
2016 - 2017 Postdoc, the Center for Brain and Cognitive Learning Sciences, the National State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University. Beijing

Working Experiences

2021 - 2023 Data Analyst, The Department of Psychiatry & Behavioral Sciences, Stanford, CA
2020 - 2021 Data Analyst(temporary employment), The Department of Psychiatry & Behavioral Sciences, Stanford, CA

Educations

2009 - 2016 **PhD, Cognitive Neuroscience**
the National Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University. Beijing, China.

2012 - 2014 Visiting Student
Imaging Research Center and the Department of Psychology, University of Texas at Austin. Austin, Texas, The USA.

2005 - 2009 **BS, Psychology**
The School of Psychology, Beijing Normal University. Beijing, China.

Research Experience

Stanford University, Stanford, CA August 2017 – July 2019 and September 2020-2023

- Project leader of aiTBS treatment related rs-MRI changes in depression patients
- Developed and implemented denoising pipeline for neuroimaging (MRI) data
- Generated the decision metrics for denoising methods from literature
- Created detailed reports of 24 denoising methods
- Statistical analysis of clinical trial data involving various data types (MRI, clinical assessments) to understand the neural correlates of effective brain stimulation treatment for depression.

- two first author manuscripts related to this work were published in *BioRxiv* (2019) and *Translational Psychiatry* (2023)

Beijing Normal University, Beijing, China

+ University of Texas at Austin, TX

October 2012 – July 2017

- Project leader of item-specific reinstatement in memory encoding and retrieval
- Design the experiment to obtain the neural bases of ITEM-SPECIFIC reinstatement during memory encoding and retrieval.
- Conducted research in both TX and Beijing and collected 50 sets of data.
- Built analysis model to detect the feature of the item-specific information, individual-specific information, and shared representation crossed participants.
- Built the model to test the cross-validation of the results.
- Using simulate data for providing extra evidence of the hypothesis which the experimental data could not cover.
- First Author papers were published in *NeuroImage* (2020) and *The Journal of the Society for Neuroscience* (2017).

Beijing Normal University, Beijing, China

October 2010 – July 2013

- Project leader of neural mechanism of effective learning
- Design the experiment to obtain the neural bases of how spaced study could improve learning efficiency.
- Conducted research and collected 60 sets of data.
- Built analysis models to detect the factors contribute to spacing effect, and also the mediator of the effect.
- First Author paper was published in *Cortex* (2016).

Skills

Experiment Design

Data analysis (datacamp: Associate Data Scientist; coursera: Machine Learning)

MRI data processing and analysis (FSL, ANTs, fMRIPrep, Nilearn)

Python(NumPy, Pandas, Scikit-learn)

Publications

First Author Publications:

1. Batail, J.-M., **Xiao, X.(Co-first Author)**, Azeez, A., Tischler, C., Kratter, I. H., Bishop, J. H., Saggarr, M., & Williams, N. R. (2023). Network effects of Stanford Neuromodulation Therapy (SNT) in treatment-resistant major depressive disorder: A randomized, controlled trial. *Translational Psychiatry*, 13(1), 240. <https://doi.org/10.1038/s41398-023-02537-9>

2. **Xiao, X.**, Zhou, Y., Liu, J., Ye, Z., Yao, L., Zhang, J., Chen, C., & Xue, G. (2020). Individual-specific and shared representations during episodic memory encoding and retrieval. *NeuroImage*, 217, 116909. <https://doi.org/10.1016/j.neuroimage.2020.116909>
3. **Xiao, X.**, Bentzley, B. S., Cole, E. J., Tischler, C., Stimpson, K. H., Duvio, D., Bishop, J. H., DeSouza, D. D., Schatzberg, A., Keller, C., & others. (2020). Functional connectivity changes with rapid remission from moderate-to-severe major depressive disorder. *BioRxiv*, 672154.
4. **Xiao, X.**, Dong, Q., Gao, J., Men, W., Poldrack, R. A., & Xue, G. (2017). Transformed Neural Pattern Reinstatement during Episodic Memory Retrieval. *The Journal of Neuroscience: The Official Journal of the Society for Neuroscience*, 37(11), 2986–2998. <https://doi.org/10.1523/JNEUROSCI.2324-16.2017>
5. **Xiao, X.**, Dong, Q., Chen, C., & Xue, G. (2016). Neural pattern similarity underlies the mnemonic advantages for living words. *Cortex; a Journal Devoted to the Study of the Nervous System and Behavior*, 79, 99–111. <https://doi.org/10.1016/j.cortex.2016.03.016>
6. **Xiao, X.**, Ye Z., Zheng, Li., Xue, G. (2016). Pattern Reinstatement during Memory Encoding and Retrieval [J]. *Journal of Beijing Normal University (Natural Science)*, 2016(06): 765-772.

Others:

1. Cole, E. J., Stimpson, K. H., Bentzley, B. S., Gulser, M., Cherian, K., Tischler, C., Nejad, R., Pankow, H., Choi, E., Aaron, H., Espil, F. M., Pannu, J., **Xiao, X.**, Duvio, D., Solvason, H. B., Hawkins, J., Guerra, A., Jo, B., Raj, K. S., ... Williams, N. R. (2020). Stanford Accelerated Intelligent Neuromodulation Therapy for Treatment-Resistant Depression. *The American Journal of Psychiatry*, 177(8), 716–726. <https://doi.org/10.1176/appi.ajp.2019.19070720>
2. Bishop, J., Davis, Z., Xiao, X., Sudheimer, K., & Williams, N. (2019). Stability of hierarchical clustering for targeted transcranial magnetic stimulation. *Brain Stimulation*, 12(2), 540. <https://doi.org/10.1016/j.brs.2018.12.783>
3. De Souza, D., Gulser, M., Cole, E., Stimpson, K., **Xiao, X.**, Tischler, C., Bishop, J., Tate, W., Sudheimer, K., & Williams, N. (2019). Structural correlates of accelerated intermittent theta-burst stimulation for treatment-refractory depression. *Brain Stimulation*, 12(2), 529. <https://doi.org/10.1016/j.brs.2018.12.743>
4. Zheng, L., Gao, Z., **Xiao, X.**, Ye, Z., Chen, C., & Xue, G. (2018). Reduced Fidelity of Neural Representation Underlies Episodic Memory Decline in Normal Aging. *Cerebral Cortex (New York, N.Y.: 1991)*, 28(7), 2283–2296. <https://doi.org/10.1093/cercor/bhx130>
5. Zhao, L., Chen, C., Shao, L., Wang, Y., **Xiao, X.**, Chen, C., Yang, J., Zevin, J., & Xue, G. (2017). Orthographic and Phonological Representations in the Fusiform Cortex. *Cerebral Cortex (New York, N.Y.: 1991)*, 27(11), 5197–5210. <https://doi.org/10.1093/cercor/bhw300>
6. Zhao, X., Wang, C., Liu, Q., **Xiao, X.**, Jiang, T., Chen, C., & Xue, G. (2015). Neural mechanisms of the spacing effect in episodic memory: A parallel EEG and fMRI study. *Cortex; a Journal*

Devoted to the Study of the Nervous System and Behavior, 69, 76–92.
<https://doi.org/10.1016/j.cortex.2015.04.002>

Selected Published Abstracts

1. **Xiaoqian Xiao**, Gui Xue. Item-specific pattern reinstatement during encoding and retrieval [A]. OHBM[C]., 2016
2. **Xiaoqian Xiao**, Qi Dong, Chuansheng Chen, Gui Xue. Neural pattern similarity underlies the mnemonic advantages for living words [A]. OHBM[C]., 2015
3. **Xiaoqian Xiao**, Russell Poldrack, Qi Dong, Gui Xue. Variable Encoding Improves Memory and Increases Neural Pattern Similarity [A]. OHBM[C]., 2013

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