CURRICULUM VITAE   Jiefeng Jiang, Ph.D

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Education and Academic Positions

2020-   **Assistant Professor**, Department of Psychological & Brain Sciences, **University of Iowa**

2016-2019   **Postdoctoral Research Associate**, Department of Psychology, **Stanford University**
             Advisor: **Anthony Wagner**

2014-2016   **Postdoctoral Research Associate**, Center for Cognitive Neuroscience, **Duke University**
             Advisor: **Tobias Egner**

2009-2014   **Ph.D** in Psychology, Department of Psychology & Neuroscience, **Duke University**
             Advisor: **Tobias Egner**
             Dissertation: A Bayesian Framework of Cognitive Control

2009-2012   **M.A** in Psychology, Department of Psychology & Neuroscience, **Duke University**
             Advisor: **Tobias Egner**

2006-2009   **M.E** in Pattern Recognition and Intelligent Systems, **Institute of Automation, Chinese Academy of Sciences**
             Advisor: **Tianzi Jiang**

1999-2003   **B.E** in Computer Science, **Zhejiang University**

Preprints and Manuscripts in Preparation

Lee, W-T., Hazeltine, E., & **Jiang, J.** (under review). Decoding task representations supporting composition and generalization in hierarchical task learning

Yang, G., & **Jiang, J.** (under review). Practice is associated with rule- to memory-based processing transition in the prefrontal cortex

Publications

Bustos, B., Mordkoof, J-T., Hazeltine, E., & **Jiang, J**. (in press). Task switch costs scale with dissimilarity between task rule. *Journal of Experimental Psychology: General*

Yang, G., Wu, H., Li, Q., Liu, X., Fu, Z., & **Jiang, J.** (2024). Conflicts are parametrically encoded: initial evidence for a cognitive space view to reconcile the debate of domain-general and domain-specific cognitive control. *eLife.* 13:e87126

Jiang, J., Bruss, J., Lee, W-T., Tranel, D., & Boes, A. (2023). White matter disconnection of left multiple demand network is associated with post-lesion deficits in cognitive control. *Nature Communications*, 14:1740

Fernandez, C., **Jiang, J.**, Wang, S. F., Choi, H., & Wagner, A. D. (2023). Representational integration and differentiation in the human hippocampus following goal-directed navigation. *eLife*, 12:e80281

Teng, C., Fulvio, J., **Jiang, J**., & Postle, B. (2022). Flexible top-down control in the interaction between working memory and perception. *Journal of Vision,* 22(11):3 1-19

Lee, W-T., Hazeltine, E., & **Jiang, J**. (2022). Interference and integration in hierarchical task learning. *Journal of Experimental Psychology: General,* 151(12): 3028-3044

Bramao, I., **Jiang, J**., Wagner, A. D., & Johansson, M. (2022). Encoding contexts are incidentally reinstated during competitive retrieval and track the temporal dynamics of memory interference. *Cerebral Cortex*, 32(22): 5020-5035

Wessel, J.*, **Jiang, J**.* (equal contribution), & Stolley, J. (2022). Action errors impair active working memory maintenance. *Journal of Experimental Psychology: General*, 151(6): 1325-1340

Madore, K. P., Khazenzon, A. M., Backes, C. W., **Jiang, J**., Uncapher, M., Norcia, A. M., & Wagner, A. D. (2020). Memory failure predicted by attention lapsing and media multitasking. *Nature*, 587(7832): 87-91

Jiang J, von Kriegstein K, & **Jiang J.** (2020). Brain mechanisms of eye contact during verbal communication predict autistic traits in neurotypical individuals. *Scientific Reports*, 10:14602.

Trelle, A. N., Carr, V. A., Guerin, S. A., Thieu, M. K., Jayakumar, M., Guo, W., Nadiadwala, A., Corso, N. K., Hunt, M. P., Litovsky, C. P., Tanner, N. J., Deutsch, G. K., Bernstein, J. D., Harrison, M. B., Khazenzon, A. M., **Jiang, J.**, Sha, S. J., Fredericks, C. A., Rutt, B. K., Mormino, E. C., Kerchner, G. A., & Wagner, A. D. (2020). Hippocampal and cortical mechanisms at retrieval explain variability in episodic remembering in older adults. *eLife,* 9:e55335

Jiang, J., Wang, S. F., Guo, W., & Wagner, A. D. (2020). Proactive control in context: Context-cued predictions of task demands facilitate perceptual decisions in virtual environments. *Nature Communications*, 11:2053

Jiang, J., Bramao, I., Khazenzon, A., Wang, S. F., Johansson, M., & Wagner, A. D. (in press). Temporal dynamics of memory-guided cognitive control and generalization of control via mnemonic integration. *Journal of Neuroscience*, 40(11): 2343-2356

Sali, T. W., **Jiang, J**., & Egner, T. (2020). Neural mechanisms of strategic adaptation in attentional flexibility. *Journal of Cognitive Neuroscience*, 32(5): 989-1008

Jiang, J., Wagner, A. D., & Egner, T. (2018). Integrated externally and internally generated task predictions jointly guide cognitive control in prefrontal cortex. *eLife,* 7:e39497

Muhle-Kabre, P. S., **Jiang, J.**, & Egner, T. (2018). Causal evidence for learning-dependent frontal-lobe contributions to cognitive control. *Journal of Neuroscience*, 38(4): 962-973

Korb, F. M., **Jiang, J.**, King, J. A., & Egner, T. (2017). Hierarchically organized medial frontal cortex-basal ganglia loops selectively control task- and response-selection. *Journal of Neuroscience,* 37(33): 7893-7905

Chiu, Y. C., **Jiang, J.**, & Egner, T. (2017). The caudate nucleus mediates learning of stimulus-control state associations. *Journal of Neuroscience*, 37(4): 1028-1038

Jiang, J., Summerfield, C., & Egner, T. (2016). Visual prediction error spreads across object features in human visual cortex. *Journal of Neuroscience*, 36(50): 12746-12763

Jiang, J., Brashier, N. M., & Egner, T. (2015). Memory meets control in hippocampal and striatal binding of stimuli, responses, and attentional control states. *Journal of Neuroscience*, 35(44): 14885-14895.

Jiang, J., Beck, J., Heller, K., & Egner, T. (2015). An insula-frontostriatal network mediates flexible cognitive control by adaptively predicting changing control demands. *Nature Communications*, 6:8165

Weissman, D., **Jiang, J.**, & Egner, T. (2014). Determinants of congruency sequence effects without learning and memory confounds. *Journal of Experimental Psychology: Human Perception and Performance*, 40(5): 2022–2037.

Jiang, J., Heller, K., & Egner, T. (2014). Bayesian modeling of flexible cognitive control. *Neuroscience and Biobehavioral Reviews*, 46: 30-43.

Jiang, J. & Egner, T. (2014). Using neural pattern classifiers to quantify the modularity of conflict-control

mechanisms in the human brain. *Cerebral Cortex*, 24: 1793-1805.

Jiang, J., Summerfield, C., & Egner, T. (2013). Attention sharpens the distinction between expected and unexpected percepts in the visual brain. *Journal of Neuroscience*, 33(47): 18438-18447.

Li, J., Liu, Y., Qin, W., **Jiang, J.**, Qiu, Z., Xu, J., Yu, C., & Jiang, T. (2012). Age of onset of blindness affects brain anatomical networks constructed using diffusion tensor tractography. *Cerebral Cortex*, 23: 542-551.

Jiang, J., Schmajuk, N., & Egner, T. (2012). Explaining neural signals in human visual cortex with an associative learning model. *Behavioral Neuroscience*, 126(4): 575-581.

Jiang, J., Zhu, W., Shi, F., Liu, Y., Li, J., Qin, W., Li, K., Yu, C., & Jiang, T. (2009). Thick visual cortex in the early blind. *Journal of Neuroscience* 29(7): 2205–2211.

Cheng, J., Shi, F., Wang, K., Song, M., **Jiang. J.**, Xu, L., & Jiang, T. (2009) Nonparametric mean shift functional detection in the functional space of task and resting-state fMRI. *Workshop on fMRI data analysis: statistical modeling and detection issues in intra-and inter-subject functional MRI data analysis, in conjunction with the MICCAI 2009.*

Jiang, J., Zhu, W., Shi, F., Zhang, Y., Lin, L., & Jiang, T. (2008). A robust and accurate algorithm for estimating the complexity of the cortical surface. *Journal of Neuroscience Methods* 172: 122–130.

Jiang, X., Liu, B., **Jiang, J**., Zhao, H., Fan, M., Zhang, J., Fan, Z., Jiang, T. (2008). Modularity in the genetic disease-phenotype network. *FEBS Letters* 582: 2549–2554.

Jiang, T., Liu, Y., Shi, F., Shu, N., Liu, B., **Jiang, J.**, & Zhou, J. (2008). Multimodal Magnetic Resonance Imaging for Brain Disorders: Advances and Perspectives. *Brain Imaging and Behavior* 2: 249–257.

Zhang, Y., **Jiang, J.**, Lin, L., Shi, F., Zhou, Y., Yu, C., Li, K., & Jiang, T. (2008). A Surface-Based Fractal Information Dimension Method for Cortical Complexity Analysis. in T. Dohi, I. Sakuma, and H. Liao (Eds.): *MIAR 2008, LNCS 5128, pp. 133–141, Springer-Verlag Berlin Heidelberg.*

Li, X., **Jiang, J.**, Zhu, W., Yu, C., Sui, M., Wang, Y., & Jiang, T. (2007). Asymmetry of prefrontal cortical convolution complexity in males with attention-deficit/hyperactivity disorder using fractal information dimension. *Brain & Development* 29: 649–655.

Shi, F., Liu, Y., Jiang, T., Zhou, Y., Zhu, W., **Jiang, J.**, Liu, H., & Liu, Z. (2007). Regional Homogeneity and Anatomical Parcellation for fMRI Image Classification: Application to Schizophrenia and Normal Controls. in N. Ayache, S. Ourselin, A. Maeder (Eds.): *MICCAI 2007, Part II, LNCS 4792, pp. 136–143, Springer-Verlag Berlin Heidelberg.*

Research Grants

Under review

| | Co-PI | *Neural and Cognitive Integration for Flexible Task Control* |
| | | R01 proposal with Co-PI Kai Hwang |

Ongoing

| 2022-2027 | PI | NIH R01MH131559 | $1,859,147 |
| | | *Neurocognitive mechanisms of task representation reorganization during task learning* | |

Completed

| 2020 | PI | Old Gold Summer Fellowship, University of Iowa | $6,000 |
| 2018-2020 | Co-I | NIH R21AG058111 | $431,750 |

		Age-related decline in interactions between context, cognitive control, and memory	
2017	PI	Stanford Center for Cognitive and Neurobiological Imaging Innovation Award	$4,725
2017-2019	PI	NIH NRSA Postdoctoral Fellowship, NIA	$174,090

Talks

2024   Invited keynote address, "*On the Learning and Organization of Task Representations*". Chinese Psychological Society, General Psychology and Experimental Psychology Division annual conference

2022   Symposium talk, "*Interference and Integration in Hierarchical Task Learning*". Cognitive Neuroscience Society annual conference

Symposium talk, "*Interference and Integration in Hierarchical Task Learning*". Society for Psychophysiological Research annual conference

2020   Invited talk, "*Neural substrates supporting the associative memory of cognitive control*". University of Oregon

Invited talk, *"Prefrontal reinstatement of contextual task demand is mediated by separable hippocampal patterns",* Neurochat conference

Conference Poster Presentations

Lee, W-T., Hazeltine, E., & **Jiang, J.** (2024). Decoding Composition and Generalization of task representations in hierarchical task learning. *Annual Meeting of the Cognitive Neuroscience Society,* Toronto, ON.

Bustos, B., Mordkoff, J-T., Hazeltine, E., & **Jiang, J.** (2024). Decoding *Temporal Dynamics of Parametric Task Switching. Annual Meeting of the Cognitive Neuroscience Society,* Toronto, ON.

Yang, G., & **Jiang, J.** (2024). Multi-level dynamics of task representation during learning. *Annual Meeting of the Cognitive Neuroscience Society,* Toronto, ON.

Huang, B., & **Jiang, J.** (2024). Both stimulus-control state associations and stimulus-response associations contribute to item-specific proportion congruency effect. *Annual Meeting of the Cognitive Neuroscience Society,* Toronto, ON.

Yang, G., & **Jiang, J.** (2023). Flexible Rule and Memory -based Representation in Task Sequences. *Annual Meeting of the Society for Neuroscience*, Washington, DC.

Bustos, B., Mordkoff, J-T., Hazeltine, E., & **Jiang, J.** (2023). Multimodal Evidence for the Reorganization of Task Rules. *Annual Meeting of the Society for Neuroscience*, Washington, DC.

Yang, G., & **Jiang, J.** (2023). Flexible Rule and Memory -based Representation in Task Sequences. *Annual Meeting of the Cognitive Neuroscience Society,* San Francesco, CA.

Bustos, B., Mordkoff, J-T., Hazeltine, E., & **Jiang, J.** (2022). Task switch costs scale with dissimilarity between task-rules in a cognitive map-like manner. *Mental Effort Workshop,* Brown University, Providence, RI.

Bustos, B., Mordkoff, J-T., Hazeltine, E., & **Jiang, J.** (2022). Task switch costs scale with dissimilarity between task-rules in a cognitive map-like manner. *Annual Meeting of the Virtual Working Memory*

Conference, online.

Bustos, B., Mordkoff, J-T., Hazeltine, E., & **Jiang, J.** (2022). Task switch costs scale with dissimilarity between task-rules in a cognitive map-like manner. *Annual Meeting of the Cognitive Neuroscience Society,* San Francisco, CA.

Lee, W-T., Hazeltine, E., & **Jiang, J.** (2022). Integration and interference in hierarchical task learning. *Annual Meeting of the Cognitive Neuroscience Society,* San Francisco, CA.

Yang, G., & **Jiang, J.** (2022). Experiences modulated the level of abstraction in task representation. *Annual Meeting of the Cognitive Neuroscience Society,* San Francisco, CA.

Jiang, J., Wang, S. F., Guo, W., Fernandez, C., & Wagner, A. D. (2019). Prefrontal reinstatement of contextual task demand is mediated by repulsion in hippocampal activity patterns between contexts. *Annual Meeting of the Society for Neuroscience*, Chicago, CA.

Jiang, J., Wang, S. F., Guo, W., & Wagner, A. D. (2018). Context-cued predictions of task demands facilitate perceptual decisions in virtual environments. *Annual Meeting of the Society for Neuroscience*, San Diego, CA.

Jiang, J., Bramao, I., Khazenzon, A., Johansson, M., & Wagner, A. D. (2018). Generalization of cognitive control demand via overlapping associative memories. *International Conference on Learning & Memory,* Huntington Beach, CA.

Wang, S. F., Carr, V. A., Favila, S. E., Bailenson, J. N., Brown, T. I., **Jiang, J.**, & Wagner, A. D. (2018). Representations of local information in human medial temporal lobe during memory-guided spatial navigation. *International Conference on Learning & Memory,* Huntington Beach, CA.

Trelle, A., Carr, V. A., Guerin, S., Guo, W., Harrison, M. B., Jayakumar, M., **Jiang, J.**, Kerchner, G., Momino, E., Tanner, N., Thieu, M., & Wagner, A.D. (2018). Parietal and occipitotemporal cortical reinstatement differentially predict successful associative memory retrieval in older adults. *Annual Meeting of the Cognitive Neuroscience Society,* Boston, MA.

Jiang, J., LaRocque, K. F., Guerin, S. A., Fernandez, C., & Wagner, A. D. (2017). Hippocampal contribution to cortical reinstatement during episodic retrieval. *Annual Meeting of the Society for Neuroscience*, Washington, DC.

Trelle, A., Bernstein, J., Carr, V. A., Fredericks, C., Guerin, S., Guo, W., Jayakumar, M., **Jiang, J.**, Kerchner, G., Khazenzon, A., Litovsky, C., Sharon, S., Thieu, M., & Wagner, A.D. (2017). Cortical and hippocampal predictors of individual differences in episodic memory in putatively healthy older adults. *Annual Meeting of the Society for Neuroscience*, Washington, DC.

Muhle-Kabre, P., **Jiang, J.,** & Egner, T. (2017). Causal evidence for learning-dependent frontal lobe contributions to cognitive control. *Annual Meeting of the Cognitive Neuroscience Society,* San Francisco, CA.

Jiang, J., Summerfield, C., & Egner, T. (2016). Surprise spreads across different features of an object to form object-level expectation in visual cognition. *Annual Meeting of the Cognitive Neuroscience Society*, New York, NY.

Jiang, J., Brashier, N., & Egner, T. (2015). Memory meets control in hippocampal and striatal binding of multi-level event features. *Annual Meeting of the Cognitive Neuroscience Society,* San Francisco, CA.

Jiang, J., & Egner, T. (2014). Neurocomputational Mechanisms of flexible cognitive control. *Annual Meeting of the Cognitive Neuroscience Society*, Boston, MA.

Jiang, J., Summerfield, C., & Egner, T. (2013). Attention amplifies or suppresses neural prediction error responses in a regionally specific manner. *Annual Meeting of the Cognitive Neuroscience Society,* San Francesco, CA.

Egner, T., & **Jiang, J.** (2011). Information-based brain mapping of stimulus- versus response-based interference control processes. *Annual Meeting of the Cognitive Neuroscience Society,* San Francesco, CA.

Teaching

University of Iowa

2023-   PSY4035: Laboratory in Computational Neuroscience

2021-   PSY5080: Foundations in Cognitive Neuroscience

2021-   PSY2811: Research Methods and Data Analysis I

2020-   PSY4020: Laboratory in Psychology

2020-   PSY5070: Programming for Psychologists

Stanford University

03/2018   Guest lecturer in undergraduate course 'Thinking matters'

Duke University

07/2016   Instructor and organizer, Amazon Mechanical Turk workshop

2011-2013   Graduate teaching assistant, Statistical Methods in Psychology and Introduction to Psychology

2010-2013   Instructor, Brain Awareness Week

Mentoring

Postdocs	Guochun Yang (2021-)
	Bingfang Huang (2022-)
Ph.D Students	Woo-Tek Lee (2020-)
	Simon Award, Department of Psychological and Brain Sciences, University of Iowa (2023)
	Bettina Bustos (2021-)
	Best student poster, Cognitive Neuroscience Society conference (2022)
Research assistants	Qiutong Hong (2023-)
	Wanjia Guo (2017-2018)
Undergraduate students	William Cheng (2024-)
	Tommy Looi (2024-)
	Jordan Nicolson (2023-)
	Jackson Han (2023-)
	Shuntaro Kawasaki (2023)
	Caleb Greene (2022-)
	Arsha Vaddadi (2022-2023)
	Qiutong Hong (2022-2023)
	Daylon Tippit (2016-2018)
	Firestone Medal for Excellent Undergraduate Research (highest award for honors thesis at Stanford, 2018)
Ph.D. Committee	Francis Smith, Tobin Dykstra, Yoojeong, Choo, Xitong Chen, Samantha Chiu, Marco Pipoly

Comprehensive exam/Prospectus committee	Qingzi Zheng, Ariel Kershner, Stephanie Leach, Jeffery Stolley, Xitong Chen, Zexuan Niu
Research Advisory Committee	Xitong Chen, Kalyani Datta, Stephanie Leach, Ying Li, Zexuan Niu
Neuroscience Program Rotation Advisor	Nathan Cremers, Jeffery Stolley

Administrative Services

2020 -	Contributor, Psychological and Brain Sciences Diversity Open Ho
2021 -	Member, Cognition area Proseminar Committee
2021 -	Member, Neuroscience Program Admission Committee
2023 - 2024	Member, Faculty Search Committee
2023 -	Member, Undergraduate Studies Committee, Department of Psychological and Brain Sciences

Reviewing Service

Journals

Attention, Perception, & Psychophysics, Brain Imaging and Behavior, Cerebral Cortex, Cognition, Cognitive Affective and Behavioral Neuroscience, Communications Biology, Current Opinion in Behavioral Sciences, eLife, European Journal of Neuroscience, Experimental Brain Research, Frontiers in Psychology, Human Brain Mapping, Journal of Alzheimer's Disease, Journal of Cognitive Neuroscience, Journal of Experimental Psychology: General, Journal of Experimental Psychology: Human Perception and Performance, Journal of Experimental Psychology: Learning Memory and Cognition, Journal of Gerontology: Psychological Sciences, Journal of Magnetic Resonance Imaging, Journal of Neuroscience, Nature Communications, Neural Plasticity, NeuroImage, Neuropsychologia, PLOS Biology, PLOS ONE, Psychological Research, Psychological Review, Psychonomic Bulletin & Reviews, Quarterly Journal of Experimental Psychology, Scientific Reports, Social Cognitive and Affective Neuroscience, Trends in Cognitive Sciences

Funding agencies

National Science Foundation

Professional Affiliations

Cognitive Neuroscience Society
Society for Neuroscience