

# Dr. Mengxia Gao

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Cognitive neuroscience / Neuropsychology / Machine learning / Computational modeling

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[mengxiagao.github.io](https://mengxiagao.github.io)

## ACADEMIC APPOINTMENTS

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**Postdoctoral Fellow, The University of Hong Kong, Hong Kong** 12/2021 – now

Department of Psychology

- **Supervisor:** Prof. Tatia Mei-Chun Lee

## EDUCATION

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**Ph.D., The University of Hong Kong, Hong Kong** 09/2017 – 08/2021

Cognitive neuroscience, Department of Psychology

- **Supervisor:** Prof. Tatia Mei-Chun Lee
- **Research interests:** machine learning, brain imaging prediction, cognitive function, aging

**M.E., South China Normal University, Guangzhou** 09/2014 – 06/2017

Developmental and Educational Psychology, School of Psychology

- **Supervisors:** Prof. Ming Liu, Prof. Ruiwang Huang
- **Research interests:** visual mental imagery, resting-state fMRI, task-fMRI

**B.S., South China Normal University, Guangzhou** 09/2010 – 06/2014

Applied Psychology, School of Psychology

- **Supervisor:** Prof. Xifu Zheng
- **Research interests:** fear emotion, conditioned fear acquisition

## RESEARCH SUPPORT

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2021 – 2024      Awardee, Hong Kong Research Grants Council Postdoctoral Fellowship  
Scheme 2021/22 (Ref. PDFS2122-7H04)

## RESEARCH EXPERIENCE

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Research Assistant, The Chinese University of Hong Kong, Hong Kong 12/2016 – 06/2017

Department of Psychology

- **Supervisor:** Prof. Chun-Yu Tse
- **Research interests:** visual mismatch negativity, EEG

## PEER-REVIEWED PUBLICATIONS

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- [1] **Gao M**, Wong NM, Lin C, Huang C-M, Liu H-L, Toh C-H, Wu C, Tsai Y-F, Lee S-H, & Lee, TM. (2023). Multimodal brain connectome-based prediction of suicide risk in people with late-life depression. *Nature Mental Health*, 1(2), 100-113.
- [2] **Gao M**, Lam CL, Lui WM, Lau KK, & Lee TM. (2022). Preoperative brain connectome predicts postoperative changes in processing speed in moyamoya disease. *Brain Communications*, 4(5), fcac213.
- [3] Shao R, **Gao M**, Lin C, Huang C-M, Liu H-L, Toh C-H, Wu C, Tsai Y-F, Qi D, Lee S-H. (2021). Multimodal neural evidence on the corticostriatal underpinning of suicidality in Late-Life Depression. *Biological psychiatry: cognitive neuroscience and neuroimaging*.
- [4] **Gao M**, Wong CH, Huang H, Shao R, Huang R, Chan CC, Lee TM. (2020). Connectome-based models can predict processing speed in older adults. *NeuroImage*, 223, 117290
- [5] **Gao M**, Shao R, Huang C-M, Liu H-L, Chen Y-L, Lee S-H, Lin C, Lee TM. (2020). The relationship between loneliness and working-memory-related frontoparietal network connectivity in people with major depressive disorder. *Behavioural brain research*, 393, 112776
- [6] Bielczyk NZ, Ando A, Badhwar A, Caldinelli C, **Gao M**, Haugg A, Hernandez LM, Ito KL, Kessler D, ..., Lurie D. (2020). Effective self-management for early career researchers in the natural and life sciences. *Neuron*, 106(2), 212-217
- [7] Shao R, Liu H-L, Huang C-M, Chen Y-L, **Gao M**, Lee S-H, Lin C, Lee TM. (2019). Loneliness and depression dissociated on parietal-centered networks in cognitive and resting states. *Psychological Medicine*, 1-11
- [8] Zhang D, Gao Z, Liang B, Li J, Cai Y, Wang Z, **Gao M**, Jiao B, Huang R, Liu M. (2019). Eyes Closed Elevates Brain Intrinsic Activity of Sensory Dominance Networks: A Classifier Discrimination Analysis. *Brain connectivity*, 9(2), 221-230
- [9] Cai Y, Zhang D, Liang B, Wang Z, Li J, Gao Z, **Gao M**, Chang S, Jiao B, Huang R. (2018). Relation of visual creative imagery manipulation to resting-state brain oscillations. *Brain imaging and behavior*, 12(1), 258-273

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- [10] **Gao M**, Zhang D, Wang Z, Liang B, Cai Y, Gao Z, Li J, Chang S, Jiao B, Huang R. (2017). Mental rotation task specifically modulates functional connectivity strength of intrinsic brain activity in low frequency domains: a maximum uncertainty linear discriminant analysis. *Behavioural brain research*, 320, 233-243
- [11] Gao Z, Zhang D, Liang A, Liang B, Wang Z, Cai Y, Li J, **Gao M**, Liu X, Chang S. (2017). Exploring the associations between intrinsic brain connectivity and creative ability using functional connectivity strength and connectome analysis. *Brain connectivity*, 7(9), 590-601
- [12] Jiao B, Zhang D, Liang A, Liang B, Wang Z, Li J, Cai Y, **Gao M**, Gao Z, Chang S. (2017). Association between resting-state brain network topological organization and creative ability: Evidence from a multiple linear regression model. *Biological psychology*, 129, 165-177
- [13] Li J, Zhang D, Liang A, Liang B, Wang Z, Cai Y, **Gao M**, Gao Z, Chang S, Jiao B. (2017). High transition frequencies of dynamic functional connectivity states in the creative brain. *Scientific reports*, 7, 46072
- [14] Sun H, Sun H, **Gao M**, Li X, Guo Z, Zhang Z, Fan X, Zhang C. (2016). Simulation investigation of dual-wavelength tuning of light emitting diodes with single QW structure. *Optical and Quantum Electronics*, 48(3), 177

#### **CONFERENCE** (selected; first author only)

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- 2021 **Gao M**, Lee TM. Multimodal brain data improve prediction of processing speed in older adults. Annual Meeting of the Organization for Human Brain Mapping, Online Virtual Meeting (Poster)
- 2020 **Gao M**, Lee TM. Connectome-based models can predict processing speed in older adults. 20th Annual Research Postgraduate Conference, Faculty of Social Sciences, The University of Hong Kong, Hong Kong, China (Oral Presentation)
- 2020 **Gao M**, Wong CH, Lee TM. Connectome-based predictions of processing speed in aging population. Annual Meeting of the Organization for Human Brain Mapping, Online Virtual Meeting (Poster)
- 2019 **Gao M**, Shao R, Lee TM. The dorsal cingulum white-matter integrity predicts both loneliness and resilience in older adults. Annual Meeting of the Organization for Human Brain Mapping, Rome, Italy (Poster)
- 2017 **Gao M**, Lee TM. The relationship between resting-state brain network topological organization and executive functioning in older adults. Third Annual Departmental Research Postgraduate Symposium, Department of Psychology, The University of Hong Kong, Hong Kong, China (Poster)
- 2017 **Gao M**, Lee TM. Interaction between sensorimotor and dorsal attention network is positively associated with processing speed in healthy aging people. Sixth Biennial Conference on Resting State and Brain Connectivity, Montreal, Canada (Abstract accepted)
- 2016 **Gao M**, Huang R, Liu M. Mental rotation task modulates degree centrality of rest brain network using MLDA method. Annual Meeting of the Organization for Human Brain

Mapping, Geneva, Switzerland (Abstract accepted)

- 2015 **Gao M**, Huang R, Liu M. Mental rotation increases efficiency of brain networks: an fMRI study. Annual Meeting of the Organization for Human Brain Mapping, Honolulu, HI, USA (Abstract accepted)

## AD HOC MANUSCRIPT REVIEW

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*Brain Connectivity*

*Neurobiology of Aging*

*Neuropsychopharmacology*

## TEACHING

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- 01/2019 – 05/2019 Teaching Assistant, PSYC2051, Perception  
09/2018 – 12/2018 Teaching Assistant, PSYC2022, Biological Psychology  
01/2018 – 05/2018 Teaching Assistant, PSYC2022, Biological Psychology

## INVITED TALKS

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- 11/06/2021 Southern Medical University, Prof. Ruibin Zhang  
16/12/2021 South China Normal University, Prof. Delong Zhang

## AWARDS AND SCHOLARSHIPS

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- 2021 2019/20 Graduate Research Publication Award  
2017 – 2021 Postgraduate Scholarship  
2018 HKU Interdisciplinary Research Competition Finalist Team  
2014 – 2017 Graduate Academic Scholarship  
2013 Second-class Scholarship for Outstanding Students  
2011 – 2014 Outstanding Student Leader Awards  
2011 Excellent Volunteer of the Guangzhou 2010 Asian Paralympic Games

## LEADERSHIP

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- 2019 – 2020 Chair of the [Organization for Human Brain Mapping](#) (OHBM), [Student and Postdoc Special Interest Group](#)  
2019 – 2020 Committee member of the OHBM China Chapter

2018 – 2019	Chair-Elect of the Organization for Human Brain Mapping (OHBM), Student and Postdoc Special Interest Group
2018 – 2020	Team leader of the HKU Graduate House Children Social Service Program
2012 – 2013	Team leader of the Guangzhou New Oriental Summer Camp
2011 – 2012	Vice-Minister of Human Resources in South China Normal University Associations

## **SKILLS**

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**Operating Systems:** Linux, Mac OS, Windows

**Technical Skills:** Brain functional and structural imaging analyses, machine learning analyses

**Programming:** MATLAB (advanced), R (intermediate), Python (intermediate)

**Languages:** Mandarin (proficiency), English (advanced), Cantonese (elementary)