

# CURRICULUM VITAE OF SHU ZHANG

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## EDUCATION

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**Chinese Academy of Sciences (CAS), China** 9/2017-9/2020

M.A. in brain neuroimaging development among human lifespan, developmental psychology

Supervisor: Prof. Gao-Xia Wei

Thesis: *Physical activity and brain development during school age*

**University of Jinan (UJN), China** 9/2012-7/2016

B.A. in applied psychology

Supervisor: Dr. Yu-Wei Zheng

Thesis: *Learning burnout and academic achievement*

## RESEARCH EXPERIENCE

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**Department of Computer Science and Technology, Tsinghua University** 8/2020-Now

**Research assistant**

- Project 1: Affective computing based on EEG and peripheral physiological signals
- Project 2: Facial expression recognition
- Project 3: Empathy in human-machine interaction

Supervisor: Prof. Dr. Yong-Jin Liu

**Institute of Psychology, CAS** 9/2017-9/2020

**Graduate research assistant**

- Project 1: MRI/fMRI Study: Chinese Color Nest Project, CCNP  
Engaged in the experimental design, behavior data collection, MRI data processing
- Project 2: Meta-analysis: The effect of Tai Chi Chuan on negative emotions  
Project leader. Engaged in study design, literature research, data analyzing, and writing the final paper.
- Project 3: ERP Study: Abdominal breathing among Qinghai inhabitants  
Engaged in the experimental design, data processing and analyzing.

Supervisors: Prof. Dr. Xi-Nian Zuo and Prof. Dr. Gao-Xia Wei

## HONORS AND AWARDS

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2020 Merit Student (CAS)  
2017-2019 Academic scholarship (CAS)  
2012-2016 Academic scholarship (UJN)  
2016 Excellent league member (UJN)  
2013 Excellent league member (UJN)  
2014 Second prize of “Star of Journalist” photography competition (UJN)  
2013 Second prize in T-shirt design competition (UJN)

## SKILLS

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### Softwares

fMRI/sMRI data processing and analyzing based on FreeSurfer/FSL/AFNI/SPM  
EEG data processing based on EEGLAB  
Experimental paradigm writing based on PsychToolBox

### Coding languages

MATLAB, Shell, R, Python and L<sup>A</sup>T<sub>E</sub>X scripts

### Instruments

Operation and data analysis of multi-channels cardiac electrophysiological polygraph, fNIRS and EEG/ERP

## INTERNATIONAL PROJECT INVOLVEMENT

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### Chinese Color Nest Project, CCNP

9/2017-9/2020

A large-scale program of modeling brain and behavioral trajectories for human lifespan (6–85 years old)

### Research Center for Lifespan Development of Mind and Brain, CLIMB

12/2017-9/2020

Established to investigate normative development across the lifespan and brain/behavior associations in typical and atypical development

## PUBLICATIONS

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1. Shu, Y., Yang, P., Liu, N., **Zhang, S.**, Zhao, G., and Liu, Y. J. (2022). Emotion Distribution Learning Based on Peripheral Physiological Signals. *IEEE Transactions on Affective Computing*, 1: 1-1. DOI: 10.1109/TAFFC.2022.3163609.
2. Yang, X., Zhou, C., **Zhang, S.**, Wang, X. A., and Liu, Y.J.(2022). 元宇宙应用的梦境理论: 基本原理、方法和启示[Dream Theory for Metaverse Applications: Principles, Methods and Implications]. *ChinaXiv*: 202203.00070. (Accepted by *Science and Techology Review*)
3. **Zhang, S.**, Liu, X., Yang, X., Shu, Y., Liu, N., Zhang, D. and Liu, Y. J. (2021). The influence of key facial features on recognition of emotion in cartoon faces. *Frontiers in Psychology*, 12: 687974. DOI: 10.3389/fpsyg.2021.687974.
4. **Zhang, S.**, Zhou, Y., Ge, L., Zeng, L., Liu, Z., Qian, W., Yang, J, Zhou, X., Wei, G. X., and Zhang, X. Y. (2021). Insomnia and somatization are predictors of post-traumatic stress disorder in pregnant women during the COVID-19 Pandemic. *Neuropsychiatric Disease and Treatment*, 2021. 17: 2539. DOI: 10.2147/NDT.S310300.
5. **Zhang, S.**, Zou, L., Chen, L. Z., Yao, Y., Loprinzi, S., Wei, G. X. (2019). The effect of Tai Chi Chuan on negative emotions in non-clinical populations: A meta-analysis and systematic review. *International Journal of Environmental Research and Public Health*, 16. PMID 31438638. DOI: 10.3390/ijerph16173033
6. Wei, G. X., Man, X. X., Ge, L. K., Yao, Y., Hu, Z. E., **Zhang, S.**, ... Zuo, X. N. (2021). 人类共情领域认知神经科学: 研究展望与应用启示[Human empathy in the field of cognitive neuroscience:

Perspectives and implications]. 中国科学: 生命科学, 51(06): 702-716. DOI: 10.1360/SSV-2020-0258

7. Wei, G. X., Si, R., Li, Y., Yao, Y., Chen, L., **Zhang, S.**, ... & Perrey, S. (2020). "No pain no gain": evidence from a parcel-wise brain morphometry study on the volitional quality of elite athletes. *Brain Sciences*, 10(7), 459. DOI: 10.3390/brainsci10070459
8. Chen, L. Z., Yuan, X., Zhang, Y., **Zhang, S.**, Zou, L., Yang, L., ... & Wei, G. X. (2020). Brain functional specialization is enhanced among Tai Chi Chuan practitioners. *Archives of Physical Medicine and Rehabilitation*, 2020. 101(7). DOI: 10.1016/j.apmr.2020.02.005
9. Li, L., **Zhang, S.**, Cui, J., Chen, L. Z., Wang, X., Fan, M., & Wei, G. X. (2019). Fitness-Dependent effect of acute aerobic exercise on executive function. *Frontiers in Physiology*, 10, 902. DOI: 10.3389/fphys.2019.00902

## ACADEMIC TALKS

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- The 11th National Academic Conference of Sports Psychology, Beijing Sport University, 22/8/2018  
Topic: Correlation between physical activity and cerebral cortex thickness in 125 Chinese adolescents
- Collaborative Innovation Center of Assessment toward Basic Education Quality, Beijing Normal University  
25/12/2017  
Topic: Fitness-dependent effect of acute aerobic exercise on executive function

## WORKSHOP AND TRAINING

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### Workshop:

- Brain Hack (Beijing & Nanning): Research reliability 12/12/2020-18/12/2020
- Brain Hack (Beijing): Imaging developing brain-mind association in vivo 13/4/2018-14/4/2018

### Training:

- The 4th advanced EEG data analysis in Beijing 19/7/2021-25/7/2021

## LANGUAGE SKILLS

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Mandarin (first language), English (fluent)

## INTERSHIPS AND ACADEMIC SERVICES

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**Engineer of brain and cognitive science: Internship in Tomorrow Advancing Life (NYSE: TAL)** 5/2020-7/2020

- Project 1: Reasoning ability training for children
- Project 2: Attention training for children

Engaged in design of training program in children's reasoning/attention ability, edit and revise questions of children's reasoning ability test, map the attention network of brain

**School Psychologist: Internship in Xingji-River Middle School of Jinan** 5/2015-6/2015  
Group psychological counseling and individual psychological counseling for students