

# CURRICULUM VITA

Updated: Oct. 2024

## Fergie Yu Wang, PhD

**Date of Birth:** July 30, 1992

**Email:** fergie\_w@163.com

**Education:** Ph.D. June 2024, Beijing Normal University  
(2024 QS Education ranking: 16th.)

**Research Specialization:** Cognitive neuroscience,  
STEM education, collaborative learning, AI<sup>+</sup> education



### PROFILE SUMMARY

My scholarly pursuits focus on the forefront of educational cognitive neuroscience, STEM education, collaborative learning, and AI-enhanced education. I specialize in utilizing multi-modal data analytics including functional near-infrared spectroscopy (fNIRS) and eye-tracking to dissect the complexities of human's learning processes and cognitive development.

2022 - Present: Member, Research Association of Learning Science, CAHE, Peking University.

### EDUCATIONAL EXPERIENCE

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- 2019 - 2024    **Ph.D. Education (Educational Technology)**  
Supervisor: *Professor Dong Yan*  
School of Educational Technology, Beijing Normal University  
Beijing, China
- 2016 - 2018    **MSc Education (Educational Technology)**  
Supervisor: *Professor Wang Haitao*  
Teaching Center of Fundamental Courses, Ocean University of China  
Qingdao, China
- 2011 - 2015    **BSc Engineering (Automation)**  
Supervisor: *Associate Professor Cheng Ming*  
College of Electrical Engineering and Control Science, Nanjing Tech University  
Nanjing, China

### EXCHANGING&VISITING EXPERIENCE

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- 2022- 2023    **Joint Ph.D. Candidate (Neuroscience)**  
Co-supervisor: *Associate Professor Teo Wei-Peng*  
National Institute of Education, Nanyang Technological University, Singapore
2021.  
Sep - Dec    **Visiting Ph.D. Student (Educational Technology)**  
Co-supervisor: *Professor Zhai Xuesong*  
College of Education, Zhejiang University  
Hangzhou, China

2014. **Visiting Undergraduate Student**  
June - Aug Global Humanities and Social Comparative Studies, Duke University  
Durham, United States

## **PUBLISHED ARTICLES**

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\* denotes corresponding author(s)

[1] **Wang, Y.**, Dong, Y.\*, Leuk, J.S., Zhai, X.S., Xu, C., Fu, Y., Teo, W.P. (2024). The role of functional near-infrared spectroscopy hyperscanning for education-based collaborative research: A systematic review. *Educational Psychology Review*, 36(1), 1. (SSCI, IF: 10.1)

[2] Lin, L., Zhou, D.H., Hu, X.Y., Wang, J.Y.\* & **Wang, Y.\*** (2024) Multiple factors drive the development of scientific thinking in urban primary school students of China: FsQCA Analysis Based on the Ecological Systems Theory. *Education and Urban Society*. (SSCI, IF: 1.20)

[3] Yang, Y., Luo, Z., Dong, Y., Kurup, P. M., & **Wang, Y.** (2023). Towards a new paradigm: the development and validation of a scale to explore technology-enhanced feedback literacy among primary and secondary school teachers. *Educational technology research and development*, 71(2), 391-413. (SSCI, IF: 5.58)

[4] Younas, M., Dong, Y., Menhas, R., Li, X., **Wang, Y.**, & Noor, U. (2023). Alleviating the Effects of the COVID-19 Pandemic on the Physical, Psychological Health, and Wellbeing of Students: Coping Behavior as a Mediator. *Psychology Research and Behavior Management*, 5255-5270. (SSCI, IF: 3.97)

[5] **Wang Yu**, Chen Chen, Yang Yunying, Zheng Yafeng, & Dong Yan\*. (2022). Research Analysis and Future Prospects of the Cognitive Neural Mechanism of Peer Interaction. *E-education Research(电化教育研究)* (02), 26-33. (CSSCI, in Chinese)

[6] Dong Yan, Yang Yunying, Luo Zelan, **Wang Yu** (2021). Study on Teacher Feedback Literacy from the Perspective of Educational Informatization 2.0. *E-education Research (电化教育研究)* (08) (CSSCI, in Chinese)

[7] Wang Haitao, **Wang Yu**, Dong Yuxue, Xiang Zini, Li Gangsheng, Yu Xiaodan... & Liu Wenjuan. (2017). A Study on the Relationship between Bullied Students' Psychological Resilience and Academic Performance. *Journal of Educational studies(教育学报)* (06), 77-82. (CSSCI, in Chinese)

[8] Dong Yan, Zhang Yuanjing, **Wang Yu**. (2021). "1+7 Model" of Project-Based Learning. *Digital Education (数字教育)* (03) (in Chinese)

[9] Which collaborative behavior can enhance inter-brain synchronization and group performance during STEM problem-solving? A fNIRS hyperscanning Study. International Society of the learning science (ISLS 2024), Buffalo, USA. (Oral presentation)

[10] Wang, Y., He, J.Y., Dong, Y.\*(2020). How to Cultivate Students' Marine Literacy? A Research in the Ocean STEAM Curriculum System. 2nd International Conference on Education, Greece. (Oral presentation)

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[11] **Wang, Y.**, Dong, Y.\* (2021). How to design and execute project-based learning in mathematics classroom. *CTRAS: the Classroom Teaching Research for All Students (CTRAS2021) Conference*. (Oral presentation)

[12] He, JY., **Wang, Y.**, Dong, Y.\* (2021). Research on Career-oriented STEM Curriculum Design Strategy. *STEM 2021: the 6th International STEM in Education Conference*. Vancouver, Canada.

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## ARTICLES IN PREPARATION

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1. Xia, L.L., **Wang, Y.**, Teo, W.P., Dong, Y.\* (2024). The impact of AI-enabled environments and interventions on learning outcomes and cognitive development: a systematic review. *Educational Psychology Review*. (SSCI, IF: 10.1, **under review**)

2. Wang, X.H., Wang, Y., Han, Z.M., **Wang, Y.**, Duan, Z.Y., Zhang, Z.P.(2024). Charting the future of child development: A decade of social robot innovation from 2013 to 2023. *Computers in Human Behavior*. (SSCI, IF: 9.0, **under review**)

3. Sun, H.,\* Leuk, J.S.P., Low, J.M., Kee, S., **Wang, Y.**, Azhari,A., Lim, F.V., Lim, V., Teo, W.P. (2024). Quantity and Quality of Children's Screen Use and Their Neural and Associated Outcomes: A Systematic Review. *Neuroscience and Biobehavioral Reviews*. (SCI, IF: 8.58, **under review**)

4. **Wang, Y.**, Dong, Y., Zhang, Y.X., Teo, W.P., Wang, X.H., Xu, Chang., Li, J.H., Zhang, M.M.\*(2024) How does peer interaction be crucial for STEM education? The neural evidence from a fNIRS hyperscanning study. *British Journal of Educational Technology*. (SCI, IF: 4.7, Submit soon)

5. **Wang, Y.**, Zhang, M.M., Zhang, Y.X., Teo, W.P., Xu, C., Li, J.H., Dong, Y.\* (2024). The synchronize mechanism of neural activity behind cognitive engagement during STEM problem-solving? *npj Science of Learning*. (SCI, IF: 5.51, Submit soon)

5. **Wang, Y.**, Zhang, Y.X., Zhang, M.M., Teo, W.P., Dong, Y. (2024). Project-Based Scripting as a Catalyst for Cognitive Synchronization in Engineering Design: An fNIRS Hyperscanning Study. *Neuroimage*. (SCI, IF: 7.4, in writing)

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## RELATED PROFESSIONAL SKILLS

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- Research design and data collection of cognitive neuroscience study
- fNIRS data analysis (cortical activation, functional connectivity, inter-brain synchrony)
- SPSS, JASP, MPlus
- Matlab, Homer, NIRS\_SPM, FC\_NIRS, BrainNet Viewer
- Skilled in the analysis and interpretation of behavioral and multimodal data

## TEACHING EXPERIENCE

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**2022-2024: Training:** fNIRS data collection and analysis; Experimental design of educational neuroscience research

**2021: Part-time Lecturer, Beijing City College, Beijing**

- Modern Educational Technology
- Pedagogy of Information Technology Courses for K-12 Schools

**2018: Teaching Assistant, New Oriental English School, Qingdao**

- TOEFL test training

## GRANTS AND FELLOWSHIPS

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2020 - **Research on Dynamic Interaction and Real-time Feedback Strategies in Online**  
2021 **Course**

Faculty of Education, Beijing Normal University

Role: Principal Investigator (PI)

2021 - **Research on Brain Synchronization Mechanisms and Strategies of Multi-**  
2025 **person Interaction in STEM Educational Context**

National Natural Science Foundation of China

PI: Dong Yan, Professor, School of Educational Technology, Beijing Normal University

*Responsibilities:* Experimental design, data collection and analysis, lead writer

2022 - **Supporting Collaborative Learning with Individual Preparation and Group**  
2024 **Awareness: A Multi-Modal Learning Analytics Study**

PI: Chen Wenli, Associate professor, National Institute of Education, Nanyang Technological University, Singapore

*Responsibilities:* Experimental Design and Implementation

2020 - **A Study on Children's Home ICT Use on their Language and Development**

2024 PI: Sun He, Senior research scientist, National Institute of Education, Nanyang Technological University, Singapore

*Responsibilities:* Experimental design, data collection and analysis, lead writer

2024 - **Promoting Early Book Reading at Home: An Intervention with Enhanced**  
2028 **eBooks**

PI: Sun He, Senior research scientist, National Institute of Education, Nanyang Technological University, Singapore

*Responsibilities:* Experimental Design and Implementation

2024- **Understanding students' cognitive presence in the metaverse: A multimodal**  
Present **learning analytics approach**

PI: Song Yanjie, Professor, the Department of Mathematics and Information Technology, The Education University of Hong Kong

*Responsibilities:* Experimental design, data collection and analysis, lead writer

## ORAL PRESENTATION

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- June, 2024 **International Society of the learning science (ISLS 2024), Buffalo, USA**  
**Wang, Y.,** Zhang, Y.X., Zhang, M.M., Teo, W.P., Dong, Y. \* (2024). Which collaborative behavior can enhance inter-brain synchronization and group performance during STEM problem-solving? A fNIRS hyperscanning Study.
- July, 2023 **The 3rd Digital Learning Research Methods and SSCI/CSSCI Paper Writing Advanced Workshop.** *How to apply fNIRS and hyperscanning technology into educational research: review and methodology.*  
Northwest Normal University, Lanzhou, China
- Feb, 2023 **Participated in the project research report with Professor Chen Wenli's team and Professor Mutlu Cukurova from University College London.**  
*Supporting Collaborative learning with individual preparation (IP) and group awareness (GA): a multi-modal learning analytics study*  
Nanyang Technological University, Singapore
- Feb, 2023 **Participated in the project research report with Professor Chen Wenli's team and Professor Carolyn Penstein Rose from Carnegie Mellon University.**  
*Supporting Collaborative learning with individual preparation (IP) and group awareness (GA): a multi-modal learning analytics study*  
Nanyang Technological University, Singapore
- Jan, 2023 **The inaugural Learning, Thinking, and Innovation Education Cloud New Year Conference.** (Online) *Investigating neural mechanism of peer interaction in the context of STEM education*
- June, 2021 **The Classroom Teaching Research for All Students (CTRAS2021) Conference.** *How to design and execute project-based learning in the mathematics classroom,* Beijing, China
- May, 2021 **The 2nd International Conference on Education in Greece (Online)**  
*How to Cultivate Students' Marine Literacy? A Research in the Ocean STEAM Curriculum System*
- Mar, 2015 **Conducted training on innovative thinking for primary and secondary school teachers, teaching "Skills and Cases of Curriculum Design for Innovative Thinking Courses".**  
Ocean University of China, Qingdao, China

## AWARDS

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- Feb. 2022 - Feb. 2023: Scholarship for Joint Ph.D. Programs at Nanyang Technological University, China Scholarship Council
- 2021: First-Class Scholarship for Ph.D. student, Beijing Normal University
- 2018: Outstanding Graduate Student, Ocean University of China
- 2017: First-Class Scholarship, Ocean University of China
- 2013: Jiangsu Provincial Overseas Exchange Scholarship: Duke University

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- 2013: Nanjing Tech University: Second and Third-class Scholarships

## **SERVICE TO THE PROFESSION**

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- Jan. 2024: Beijing Normal University's First Smart Education Micro-Forum: Intelligent Technology Driving Educational Practice Innovation and Change.  
*Responsibilities: organization, expert reception.*
- Nov. 2023: Beijing Normal University 2023 Sino-African College Deans Forum.  
*Responsibilities: Technical support for conference organization.*
- Aug. 2023: Beijing Normal University's "Multimodal Data-Driven Learning Science Research: Techniques and Methods" Special Training.  
*Responsibilities: organization, expert reception, consultation arrangement, and conference moderation.*
- July. 2022: Second International Education Forum at Beijing Normal University: Sub-forum on "Integration of Science and Education in the Smart Era."  
*Responsibilities: Moderate and host of the forum (online).*
- 2021 - 2022: Jing-Hang Online Academic Forum.  
*Responsibilities: organization and moderation.*
- 2019: SSCI Paper Writing Workshop for Beijing Normal University's F0701 Project Application Dialogue.  
*Responsibilities: organization, expert reception, and conference moderation.*
- Dec.2018: Dialogue on SSCI Education Research Paper Topics and Writing - Domestic and International Core Education Technology Paper Seminar at Beijing Normal  
*Responsibilities: organization, expert reception, and conference moderation.*
- 2018: National Primary and Secondary School STEM Innovative Education Capability Enhancement Special Training at Ocean University of China.  
*Responsibilities: conference organization, expert reception, and moderation.*
- 2018: Innovative Thinking Workshop at the Basic Teaching Center, Ocean University of China.  
*Responsibilities: conference organization, host, and expert reception.*

## **HOBBIES**

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- Fitness Trainer, National Sports Administration Certificate
- SSI freediver and mermaid
- 2017: 3rd Prize in Aerobics Competition, Ocean University of China
- 2016: 1st Prize in Poster Design Competition, Ocean University of China
- 2013: 3rd Prize in Aerobics Competition, Nanjing Tech University
- 2012: 3rd Prize in Street Dance Competition, Nanjing City Universities
- Sports: marathon, swimming, bouldering, badminton
- Music: singing and playing guitar