ACADEMIC CURRICULUM VITAE

YUXI WANG

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EDUCATION

2022 – present	**Ph.D., candidate,** Applied Psychology **Peking University,** Beijing, China Supervisor: Yujia Peng, Ph.D.
2018 – 2019	**M.S., Biomedical Engineering (Distinction)** **University of Dundee**, Dundee, UK Thesis*: "Functional Brain Imaging Study of Mood Disorder"* Supervisor: Prof. Douglas Steele. Honors: "Best Student" and "Best Project" (1st student received both honors school-wide) Ranking: 1/42
2014 – 2018	**B.S., Biotechnology** **University of Science and Technology Beijing**, Beijing, China Thesis*: "Thermal protecting membrane in laser-induced surface acoustic wave Optical Coherence Elastography (SAW-OCE)"* Supervisor: Dr. Chunhui Li. (University of Dundee) Grade: Level A (2017 – 2018 Exchange in University of Dundee) Cumulative GPA: 3.61/4.00, Ranking: 7/51 Financial Engineering Minor

INTERNSHIP EXPERIENCE

2025 – present	**Research Intern, Beijing Institute for General Artificial Intelligence (BIGAI),** Beijing, China
2021 – 2022	**Research Assistant, Peking University**, Beijing, China Supervisor: Yujia Peng, Ph.D.
2019 – 2021	**Research Assistant, Peking University**, Beijing, China Supervisor: Yinyin Zang, Ph.D.

RESEARCH INTERESTS

- Understanding the dynamic role of prior expectations in social cognition.
- Developing computational algorithms to delineate prior expectations, serving as a world model to guide social cognition in artificial intelligence.
- Understanding the cognitive and neural mechanisms of social information processing in social interactions using computational modeling and brain imaging.
- Identifying the failure mode in cognitive, emotional, and social processes in clinical populations with mood and anxiety disorders, and autism.
- Mapping neuropathological differences across age groups in clinical populations.

Keywords: Prior expectations, Social cognition, Emotion recognition, Intention recognition, Biological motion perception, Facial expressions perception, Social scenes, Bayesian model, Drift-diffusion model,

Machine learning, Deep neural network, Embodied intelligence, Artificial general intelligence, World model, Benchmark

TECHNICAL SKILLS

Research: MATLAB (Psychtoolbox, Biological Motion toolbox, Wavelet toolbox), Python (Pytorch, Scikit-Learn, OpenCV, fmriprep), R (lme4, Lavaan), SPM (Statistical Parametric Mapping), Mango, MRIcron, GingerALE, Adobe Illustrator, Latex, Statistical Package for the Social Sciences (SPSS), Qualtrics, Microsoft Office Suite, Photoshop.
Engineering: SOLIDWORKS (3D modeling, 3D printing), Unity (3D scene building, VR game building), Ansys (computational fluid dynamics software), LABVIEW (real-time sensor signal processing).

HONORS AND AWARDS

Award for Scientific Research*, School of Psychological and Cognitive Sciences, Peking University, Beijing, China* 2024
Three-class Scholarship (¥1000)*, School of Psychological and Cognitive Sciences, Peking University, Beijing, China* 2023,2024
Departmental Distinction in Biomedical Engineering, *University of Dundee, Dundee, UK* 2019
Best Students & Best Project - 1st student received both honors, *University of Dundee, Dundee, UK* 2019
Scholarship for master's degree (£12000), *China Scholarship Council, China* 2018-2019
Alumni Scholarship (£1500), *University of Dundee, Dundee, UK* 2018
Scholarship for Outstanding Undergraduate Exchange (£7650), *China Scholarship Council, China* 2017-2018
National Encouragement scholarship (¥5000), *University of Science and Technology Beijing, Beijing, China* 2015
People's Third-class Scholarship (¥500), *University of Science and Technology Beijing, Beijing, China* 2014,2016,2017

PUBLICATIONS

Peer-reviewed Journal Articles

(* Equal contribution, # Corresponding author)

1. Suveges, S[#]., **Wang, Y**., Tolomeo, S., Gilbertson, T., & Steele, D. (2025). Treatment resistant recurrent unipolar and bipolar depression: Associative learning abnormalities. *Brain. In press.*
2. Peng Y[#]., **Wang Y**., Ju Q., Liu F., & Xu J. (2025). Investigating social cognitive characteristics of social anxiety within the Bayesian framework. *Advances in Psychological Science, 33*(8), 1267–1274. https://doi.org/10.3724/SP.J.1042.2025.1267
3. Fan, S., **Wang, Y**., Wang, Y., & Zang, Y. (2025). Revisiting Resting-State Functional Connectivity of the Amygdala and Subgenual Anterior Cingulate Cortex in Adolescents and Adults With Depression. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*, *10*(7), 759-768.
4. **Wang, Y**., Zang, Y., & Peng, Y.[#] (2024). Validity and reliability of the Chinese version of Social Anxiety Questionnaire for Adults. *Chinese Mental Health Journal, 38*(08), 730–736.
5. Peng Y[#]., **Wang Y**., & Lu D. (2023). The mechanism of emotion processing and intention inference in social anxiety disorder based on biological motion. *Advances in Psychological Science, 31*(6), 905–914. https://doi.org/10.3724/SP.J.1042.2023.00905

Peer-reviewed Conference Proceedings

1. **Wang, Y**., Jia, R., Yuan, M., Xiao, J., & Peng, Y[#]. (2024, August 6-8) *Understanding the Negative Cognitive Bias of Social Anxiety in Biological Motion through a Hierarchical Drift Diffusion Model.* [Poster Presentation] Seminar on Mental Processes and Modeling, Zhejiang, China.
2. **Wang, Y**., Jia, R., Yuan, M., Xiao, J., & Peng, Y[#]. (2024, July 4-6) *Understanding the Negative Cognitive Bias of Social Anxiety in Biological Motion through a Hierarchical Drift Diffusion Model.* [Poster

Presentation] The fifth Annual Academic Conference of Decision Psychology Professional Committee of Chinese Psychological Society, Tibet, China.

3. **Wang, Y**., Lu, D., Li, Z., & Peng, Y[#]. (2022, November 25-27) *Revealing mechanisms of Emotional Biological Motion Perception in Social Anxiety through the Drift-Diffusion Model* [Oral Presentation] Twenty-fourth Annual Conference of Chinese Psychological Society, Henan China.
4. **Wang, Y**., Zang, Y., & Peng, Y.[#] (2022, November 25-27) *Reliability and Validity of the Chinese Version of the Social Anxiety Questionnaire - Adults* [Oral Presentation] Twenty-fourth Annual Conference of Chinese Psychological Society, Henan China.
5. **Wang, Y**., Zang, Y[#]., & Wang, Y[#]. (2021, October) *Revisited Resting-State Functional Connectivity between Amygdala and Subgenual Anterior Cingulate Cortex in Depressive Adolescents and Adults.* [Oral Presentation] Twenty-third Annual Conference of Chinese Psychological Society, Nei Mongol, China.
6. Li, M., **Wang, Y.**, Wang, B., Chen, Q., Wang, Y., Bao, J., Zang Y[#]. (2020, November). *The effect of guided narrative technique on secondary traumatic stress in COVID-2019 outbreak: An online intervention study.* [Poster presentation] the Association for Behavioral and Cognitive Therapies (ABCT) Conference 2020, Philadelphia, US.

Patents

1. Sun, Z., Wang, M., **Wang, Y**., Li, W., Peng, Y., & Zhang, Z. (2025, February 7). A teaching method and device based on an embodied intelligent agent system (Chinese Patent No. CN202411977318.5). China National Intellectual Property Administration.
2. Shi, G., Zeng, G., Huang, J., **Wang, Y**., & Li, Y. (2020, September 11). A supramolecular polymer and its preparation and application method (Chinese Patent No. CN107903400B). China National Intellectual Property Administration.
3. Shi, G., **Wang, Y**., Huang, J., Zeng, G., & Li, Y. (2017, February 22). A food safety detection device based on intelligent mobile terminals (Chinese Patent No. CN205982094U). China National Intellectual Property Administration.

RESEARCH EXPERIENCE

Investigating Social Cognitive Characteristics of Social Anxiety within the Bayesian Framework. **2023 – Present**

Ph.D. Program, School of Psychological and Cognitive Sciences, Peking University, Beijing, China
Supervisors: Yujia Peng, Ph.D.
Funded by General Program of National Natural Science Foundation of China (32471151)

- Investigating the role of prior expectations in atypical social cognition among individuals with high social anxiety traits.
- Delineating and constructing the prior model for emotion recognition in social interactions.
- Analyzing the formation of prior expectations among individuals with high social anxiety, and uncovering the underlying neural mechanisms.

A Mechanistic Investigation of Emotion Processing and Social Cognition in Social Anxiety Disorder Based on Biological Motion **2021 – Present**

Ph.D. Program, School of Psychological and Cognitive Sciences, Peking University, Beijing, China
Supervisors: Yujia Peng, Ph.D.
Funded by Young Scientists Fund of the National Natural Science Foundation of China (32200854)

- Investigating the negative cognitive biases in emotion recognition of biological motion and facial expressions among individuals with social anxiety.
- Examining the interplay of top-down and bottom-up processes in atypical social cognition and refining existing theories.
- Developing clinical classification and prediction models for social anxiety.

Large Language Models and Embodied Intelligence Metacognition Testing **2025–Present**

- Developing metacognition benchmark and evaluation systems for large language models and embodied intelligence.

Revisited Resting-state Functional Connectivity Between Amygdala and Subgenual Anterior Cingulate cortex in Depressive Adolescents and Adults **2019 – 2021**

Post-master research assistant research, School of Psychological and Cognitive Sciences, Peking University, Beijing, China

Supervisors: Yinyin Zang, Ph.D. & Yin Wang, Ph.D.

- Examined connectivity between the amygdala and multiple prefrontal regions in large adolescent and adult open resting-state fMRI datasets.
- Refined neurocognitive models separately for adolescents and adults.

Aberrant Social Cognitive Functions in Autism: A Meta-Analysis **2019 – 2021**

Post-master research assistant research, School of Psychological and Cognitive Sciences, Peking University, Beijing, China

Supervisors: Yinyin Zang, Ph.D. & Yin Wang, Ph.D.

- Comprehensively reviewed the atypical social cognition of autism within a hierarchical concept structure, covering key aspects including social attention, social touch, social space, self, self-emotion, social evaluation, social learning, social reasoning, and social motivation.

Functional Brain Imaging Study of Mood Disorder **2018 – 2019**

Master's Thesis, Imaging Science and Technology, University of Dundee & Ninewells Hospital, Dundee, UK

Supervisor: J Douglas Steele, Ph.D. MD.

- Performed activation likelihood estimation analysis to obtain the brain activation pattern for reward anticipation and reward outcome phases during reward learning.
- Analyzed the task-based fMRI imaging for patients with major depressive disorder, bipolar disorder patients, and health controls by SPM.
- Explored the relationship between neuroimaging findings and clinical scales by SPSS.
- Manipulated machine learning on the discovered key features.

Development and Design Blood Glucose Monitoring Socks **2018 – 2019**

Venture Competition Winner (Business idea competition), School of Science and Engineering, University of Dundee, Dundee, UK

- Developed and designed socks with sensors and phone APP for blood glucose monitoring to prevent diabetes.
- Join the team as a technician, responsible for question raising, idea formation, and technical details.

Thermal Protecting Membrane in Laser-induced Surface Acoustic Wave Optical Coherence Elastography (SAW-OCE) **2018**

Undergraduate Thesis, School of Science and Engineering, University of Dundee, Dundee, UK

Supervisor: Chunhui Li, Ph.D.

- Determined the material and shape of the targeted membrane.
- Examined the membrane performance on the substitute material for the human skin to ensure its protection function and no disturbances on skin cancer diagnosis.

Synthetic Biology Project for International Genetically Engineered Machine Competition **2017 – 2018**

Undergraduate Research Internship, iGEM bronze award
Synthetic Biology Lab, School of Chemistry and Biological Engineering, University of Science and Technology Beijing, Beijing, China
Supervisor: Qing Song, Ph.D.

- Conducted optimal condition exploration, design of transcription codon, protein design, subject-related production of notoginseng saponins, and human absorption.

Student Research Training Program **2015 – 2017**
Undergraduate Research Internship
Food and Environmental Safety Lab, School of Chemistry and Biological Engineering, University of Science and Technology Beijing, Beijing, China
Supervisor: Guoqing Shi, Ph.D.

- Explored the optimal condition to design test paper for detecting the peroxide value of cooking oil with high sensitivity and accuracy.
- Designed a 3D device for linking the phone test APP to test paper by SOLIDWORKS and 3D printing.

TEACHING EXPERIENCE

01603011: Advanced Psychological Research Methods (Spring 2025). Instructor: Yujia Peng, Ph.D.
- Designed weekly quizzes, graded course assignments, prepared and organized the final exam.

01618010: Advanced Psychological Research Methods (Spring 2024). Instructor: Yujia Peng, Ph.D.
- Organized presentations, mentored group projects, gave the oral presentation, and graded class assignments.

01610661: Psychopathology (Winter 2023). Instructor: Yujia Peng, Ph.D.
- Explained weekly quizzes, organized presentations, and graded class assignments.

01610651: Cognitive Behavior Therapy (Spring 2020, Spring 2021). Instructor: Yinyin Zang, Ph.D.
- Planned lessons, and graded class assignments.

01630090: Abnormal Psychology (Spring 2019). Instructor: Yinyin Zang, Ph.D.
- Prepared instructional materials.

PROFESSIONAL TRAININGS

Computational Psychiatry Course 2020 **Sep. 2020**
Duration: 5-day lectures & 1-day tutorials
Organizer: The Translational Neuromodeling Unit, University of Zurich, ETH Zurich
- Lecture topics contain Bayesian Learning, Active Inference, Reinforcement Learning & Decision-Making, Model Inversion, Machine Learning
- Attended the tutorial for machine learning

2020 Neuromatch Academy summer school for computational neuroscience, **Jul. 2020**
Duration: 3-week tutorials & group project
Organizer: Neuromatch Academy Team
- Tutorial topics include Python Workshop, Model Types, Modeling Practice, Model Fitting, Machine Learning, Dimensionality Reduction, Bayesian Statistics, Linear Systems, Decision Making, Optimal Control, Reinforcement Learning, Real Neurons, Dynamic Networks, Network Causality, Deep Learning.
- Involved in building a deep learning model to predict the participants' task performance through resting-state fMRI whole brain regions of functional connectivity.

Udacity Virtual Reality Nanodegree **2017 –2018**
Organizer: Udacity
- Developed a 3D maze game with coin collection, designed to run on the Android system by Unity.

PERSONAL AFFILIATIONS

2022-present	Association for Psychological Science (Student Member)
2018-2019	The Institution of Engineering and Technology (Student Member)