

# Qingqing Yang

Assistant Research Scientist

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## EDUCATION

### **New York University, NYU**

09/2021 – 05/2023

M.A. in Psychology

New York, N.Y.

GPA: 3.97/4.0

*Courses:* Computational Cognitive Modeling (PhD level), Math Tools for Cognitive Science and Neuroscience (PhD level), Introduction to Machine Learning

### **Zhejiang University, ZJU**

09/2017 – 06/2021

B.Sc. in Psychology

Zhejiang, China

GPA: 3.92/4.0 (Rank 5%)

*Honors:* Zhejiang Province Government Scholarship (3%)

*Math-Major Courses:* Advanced Algebra, Calculus

## Research Experience

### **Assistant Research Scientist, NYU**

08/2023 – Present

PI: Dr. Clayton E. Curtis

#### ***M.A. Thesis: Modeling Working Memory Limit and Parietal Cortex Involvement***

- Designed a whole-report memory guided saccade (MGS) task in MATLAB;
- Developed a MATLAB package to analyze multi-item MGS eye-tracking data ([iEye](#));
- Fitted Variable Precision, Mixture, and Slots models for working memory fidelity;
- Collected and analyzed fMRI data, draw visual population receptive field maps;
- Applied TMS to defined intraparietal sulcus (IPS) for causal evidence.

### **Assistant Research Scientist, NYU**

09/2022 – Present

PI: Dr. Catherine Hartley | Supervisor: Dr. Noam Goldway

#### ***Computational Phenotyping of Decision Making in Adolescent Psychopathology***

- Revised JavaScript code for Risk task, Pavlovian-Instrumental task, and Two-step task;
- Adapted Reinforcement Learning Models in Python and MATLAB, to qualify decision making phenotypes and their test-retest reliability, with hierarchical Bayesian modeling.
- Adapted and performed ABCD MRI procedure, relate computational phenotypes, to clinical symptoms and neural connectivity.
- Perform administrative management of over 400 enrollments, with Git, Python and R.

### **Research Assistant, ZJU**

05/2019 – 06/2021

PI: Dr. Hui Chen

#### ***Undergraduate Thesis: Working-Memory-Guided Attention Competes with Exogenous Attention but Not with Endogenous Attention.*** [\[Published\]](#)

- Completed 2 behavioral experiments to test the mechanism of WM-guided attention.

### **Active Inhibition of Attended Information and its Neurocognitive Mechanism**

- Designed 4 experiments in MATLAB to investigate neural mechanism of attribute amnesia, which dissociates the attention and working memory;
- Collected data from over 15 subjects for each experiment, performed statistical analysis;
- Analyzed EEG data, extracted N2pc and Pd, trained the classifier to decode task features.

### **Active Inhibition Mechanism of Attended Information Based on Dual-Task Paradigms**

- Completed 6 behavioral experiments to compare the working memory fidelity of irrelevant feature and encoded but no longer useful feature of objects.

## **Skills**

**Code** : MATLAB, Python, R, Bash, JavaScript.

**Tools** : Git (GitHub, GitLab), High-Performance Computing (Slurm), Software Containers (Docker), Conda, Qualtrics, Redcap.

**Computational** : Artificial Neural Networks (PyTorch), Reinforcement Learning, Bayesian Inference (Stan), Machine Learning (Scikit-learn).

**Neuroscientific** : Eye-tracking (EyeLink, iEye) ; TMS (Magstim, MagVenture, Brainsight); MRI (Siemens Prisma, AFNI, FSL, freesurfer); EEG (BrainVision, EEGLab).

## **Teaching**

### **Teaching Assistant, NYU**

01/2022 – 05/2022

Advanced Psychological Statistics (Undergraduate Course)

- Grade exams and homework, hold office hours;
- Lead 2 recitations sessions per week, teaching R and statistical analysis.

## **Publications**

\* Denotes those authors contributed equally to the work

Zhu, P.\*, **Yang, Q.\***, Chen, L., Guan, C., Zhou, J., Shen, M., & Chen, H. (2023). Working-Memory-Guided Attention Competes with Exogenous Attention but Not with Endogenous Attention. *Behavioral Sciences*, 13(5), 426. <https://doi.org/10.3390/bs13050426>

## **Conference Presentations**

**Yang, Q.**, Li, M., & Curtis, C. Modeling Effects of Interrupting Parietal Cortex Neural Activity on Working Memory Limit. Flash Talk at *Neuromatch Conference (NMC)*, Sep 2022. [\[Poster\]](#)

Goldway, G., Solomyak, L., Karni, G., Zorowitz, S., Stollar, R., **Yang, Q.**, Nielsen, S., Cuevas, R., Bizzell-Hatcher, G, Gal Shoval, Eldar, E., Niv, Y., & Hartley, A., C. Reliability of a Reinforcement-Learning Task Battery for Computational Phenotyping of Decision-Making in Adolescent Psychopathology. Talk at *Computational Psychiatry Conference (cpconf)*, Jul 2023. [\[Poster\]](#)