

# YIWEN ZHANG

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## EDUCATION

### University of Pittsburgh

Ph.D in Psychology (Cognitive) with Quantitative Minor, GPA 4.0

Pittsburgh, PA

2019 – 2024

### Zhejiang University

B.S. in Psychology, GPA 3.88/4.0 (honored graduation, ranked #1 in Department of Psychology)

Hangzhou, China

2015 – 2019

## PUBLICATIONS & POSTERS

**Zhang, Y.** & Rottman, B. M. (2021). Casual Learning with Delays Up to 21 Hours. *Proceedings of the 43<sup>rd</sup> annual conference of the cognitive science society.*

**Zhang, Y.** & Rottman, B. M. (2021). Casual Learning with Interrupted Time Series. *Proceedings of the 43<sup>rd</sup> annual conference of the cognitive science society.*

**Zhang, Y.,** Yang, Z., Liang, J., Wu, F., Gao, Z. (2018, July). Object-based Attention, not Spatial Attention, is Critical for Encoding Feature Binding in Visual Working Memory. *14th Asia-Pacific Conference on Vision and the 3rd China Vision Science Conference.*

## EXPERIENCE

### User Research Intern, Advanced Driver-Assistance Systems (ADAS)

Nov 2018 – Apr 2019

Montaube Design (Hangzhou) Ltd. Co.

Hangzhou, China

Mentor: Dr. Fang Chen, Chalmers University of Technology, Gothenburg, Sweden

- This project aimed to design user-friendly interface panels for ADAS and provide information for ADAS industry regulation in China
- Investigated User Experience of ADAS based on Tesla Model S, Volvo XC60 and Geely Borui GE by one-to-one interview

## SELECTED PROJECTS

### Mobile-based Long-term Real-life Causal Inference Study

Aug 2019– Present, Pittsburgh, PA

- Designed a between-subject long-term experiment to investigate how people process delayed causal information
- Recruited 200+ subjects, performed **regression**, **Bayes factor** and **permutation test** to analysis data using **R**
- Engaged in the full-stack development of mobile based study, using Flask, **Firestore** and Vue.js
- Shared this experiment as a template for designing, programming, and running Psychology experiments in the cloud, wrote tutorials and instructions to share this template to psychology community.

### Youtube Trending Video Data Visualization | R Shiny

May 2021-Aug 2021, Pittsburgh, PA

- Designed and developed an interactive Shiny app to explore the Youtube Trending Data since August 2020.
- Used ggplot2 and shiny package to render interactive scatter plots, histograms, and regression lines.
- The app was deployed to cloud: [https://yiwenzhang.shinyapps.io/youtube\\_trending\\_data\\_app](https://yiwenzhang.shinyapps.io/youtube_trending_data_app)

### Bayesian Modeling of Episodic Memory in Causal Learning

Mar 2020 – Aug 2020, Pittsburgh, PA

- The goal of this study is to figure out the underlying strategies subjects are using when doing causal judgement.
- Built probability models for multiple potential strategies
- Ran **MCMC** with 10K+ iterations averaging multiple potential models(strategies) to capture subjects' behavior using **JAGS** and **R**

### A Machine Learning Approach to Predict Human Causal Judgement

March 2020 – May 2020, Pittsburgh, PA

- Explored using machine learning classifiers to predict human causal judgement by comparing performance of different ML algorithms (Naïve Bayes, J48, LWL, SVM) by cross-validation
- Trained and optimized a model by using bagging with J48 classifier to predict causal judgement in a psychology experiment and significantly increased performance by 5%

## SKILLS

### Methods

- Working with data: R (tidyverse), Python (numpy, pandas), d3.js, SQL, SPSS
- Stats expertise: Bayesian Modeling, Regression, Hierarchical and Mixed Effects Modeling, Categorical Data Analysis, Model Selection and Dimension Reduction, Neural Network, Reinforcement Learning, Resampling(Cross Validation, Bootstrap)
- Other expertise: Experimental and Survey Design

### Web development

- JavaScript, HTML/CSS, Vuejs, Flask, Github, Google Cloud, Google firestore