

Junsong Lu

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EDUCATION

- **University of California San Diego** United State
Ph.D. Experimental Psychology Supervisor: Prof. Chujun Lin *Sep. 2023 -*
- **The Chinese University of Hong Kong, Shenzhen** China
M.S. Applied Psychology Supervisor: Prof. Xiaotian Wang *Sep. 2018 - Jul. 2020*
- **Northeastern University** China
B.S. Metallurgical Engineering *Oct. 2014 - Jun. 2018*

PUBLICATIONS

- Wang, X.T.* , Wang, P.* , **Lu, J.**, Zhou, J., Li, G., & Garelik, S. (2022) Episodic Future Thinking and Anticipatory Emotions: Effects on Delay Discounting and Preventive Behaviors During COVID-19. *Applied Psychology: Health and Well-Being*, 14(3), 842-861.
- **Lu, J.***, Lu, Q.* , & Lu, L. (2022) Differential Effects of Fundamental and Longitudinal Life-History Trade-Offs on Delay Discounting: An Evolutionary Framework. *Behavioral Sciences*, 12(3), 67.
- Samore, T., Fessler, D. M., Sparks, A. M., Holbrook, C., Aarøe, L., Baeza, C. G., ... & Wang, X. T. (2023). Greater traditionalism predicts COVID-19 precautionary behaviors across 27 societies. *Scientific Reports*, 13(1), 4969.
- **Invited Resubmission: Lu, J.**, Yao, J., Zhou, Z., & Wang, X.T.* *Psychological Bulletin*
- **Under Preparation: Lu, J.*** The Signaling Effects of Blood Glucose and Appetitive Stimuli on Delay Discounting: A Meta-Analysis. *PsyArXiv*. August, 10. <https://psyarxiv.com/zkgwt/>
- **Under Preparation: Wang, X.T.* , Lu, J.**, & Garelik, S. Implicit and Explicit Leadership Perception Through the Lens of the 2016 Presidential Election.
- **Under Preparation: Lu, J.#**, Jin, Y.#, Liang, S., & Li, T.* Screening and Explaining Suicide-Associated Factors in Adolescents Using Interpretable Machine Learning and Network Analysis: A Cross-Sectional Study.

RESEARCH EXPERIENCE

- **The Hong Kong Polytechnic University** Hong Kong, China
Project Associate (Full-time) *Aug. 2022 - current*
 - **Investigating the Role of Androstadienone in Prosocial Behavior** Wrote python code in Psychopy to generate an experimental program that could provide feedback to participants and repeat trials with no responses. Blended chemical reagents to prepare the olfactory stimuli consisted of androstadienone and propylene glycol. Administered hormones to participants and fitted Bayesian drift-diffusion models using choice and response time data.
 - **The Effect of Testosterone on the Dynamic Change in Self-Esteem** Modeled the generative process of self-esteem using reinforcement-learning model, kernel regression, and Gaussian process model under the hierarchical Bayesian framework.
- **Independent Research** Guilin, China
Independent Researcher *Sep. 2021 - Aug. 2022*
 - **The Lifelong Development of Delay Discounting: A Meta-Analytic Review** Fitted a meta-analysis model with robust variance estimation to quantify the age effect on delay discounting. Built moderators with open data sources. Performed feature engineering for various moderators like life expectancy and socioeconomic status. Proposed a theoretical framework to explain inconsistent findings over the past three decades.

- **Differential Effects of Fundamental and Longitudinal Life-History Trade-Offs on Delay Discounting** Used the theoretical framework proposed in one of my previous studies to explain the trait-like quality and age-related development of delay discounting. Tested corresponding hypotheses using robust statistical techniques. Completed the project independently from conceptualization to journal publication.
- **Detecting Nonlinear Relationships Behind Effect Sizes in the Framework of Meta-Analysis** Proposed a derivative-based method to synthesize effect sizes based on Lagrange's mean value theorem, which was able to recover quadratic and asymptotic relationships behind effect sizes. Conducted a simulation study to validate the method, in which 1000 data sets were generated for each of the 972 experimental conditions. Calculated the relative bias and the corresponding coverage proportions of the 95% confidence interval for the fixed-effect parameter estimates to show that the method could result in unbiased estimates.

- **Affiliated Mental Health Center, Zhejiang University** Hangzhou, China
Visiting Student Jul. 2021 - Sep. 2021
 - **Screening and Explaining Suicide-Associated Factors in Adolescents** Predicted suicidal behavior in adolescents using interpretable machine learning ($N = 68472$); calculated Shapley values of suicide-associated factors based on results from XGBoost and revealed the impact of risk factors on individual predictions; estimated a mixed graphical model to examine the trajectory of suicidal behavior.
- **The Chinese University of Hong Kong, Shenzhen** Shenzhen, China
Research Assistant (Full-time) Oct. 2020 - Aug. 2021
 - **Exploring the Emotional Mechanisms Underlying Decision-Making in Public Arenas** Conducted moderation and bootstrapped mediation analysis to examine the effect of anticipatory emotions induced by episodic future thinking on precautionary behavior during the COVID-19 pandemic.
 - **Implicit and Explicit Leadership Perception Through the Lens of the 2016 Presidential Election** Predicted the election outcome of the 2016 general election with face-based inferences of leadership and likability. Compared the face-based ratings of leadership and likability in the explicit (participants correctly identified the target candidate in a morphed face) and implicit conditions (when the candidate was not recognized) using mixed ANOVA.
 - **The Influence of Ownership Experience on Psychological Attachment and Loss Aversion** Manipulated ownership experience in online experiments. Wrote R code to estimate loss aversion of an endowed commodity using the parameterization of cumulative prospect theory.
- **Shenzhen Research Institute of Big Data** Shenzhen, China
Visiting Graduate Mar. 2019 - Jul. 2020
 - **An Exploration of Self-Control and Internet Gaming Disorder (IGD)** Conducted behavioral experiments and analyzed IGD scores through Item Response Theory (e.g., the graded response model) to obtain the typical disorder symptoms of campus students. Used machine learning techniques (e.g., XGBoost) and causal inference algorithms (e.g., PC, FCI, and LiNGAM) to identify the antecedents and ramifications of IGD and self-control.

SKILLS SUMMARY

- **Programming** R, Stan, Python, NetLogo, MATLAB, Mplus
- **Software** PsychoPy, Eprime, JASP, Tetrad, CiteSpace
- **Other Skills** Git, Qultrics, ASReview, Markdown, LaTeX
- **Languages** English, Chinese (native)

PROFESSIONAL TRAINING

- **GPT 101** The Openmind Club
Understand principles of GPT, learn about prompts, and develop apps. *Mar. 2023 - May. 2023*
- **An Introduction to Agent-Based Modeling** The Swarma Club
Courses in modeling natural and social systems with NetLogo *Feb. 2022*
- **Intelligence Analysis** The Openmind Club
Courses in informatics, scientometrics, and CiteSpace basics *Oct. 2020 - Feb. 2021*
- **Causality, Independence, and Adaptive Prediction** Shenzhen Research Institute of Big Data
Causal discovery algorithms and their implementation in Tetrad *July. 2019*

HONORS AND AWARDS

- Outstanding Graduate - Nov, 2020
- Academic Excellence Award - Nov, 2020
- Academic Scholarship Gold Award - Nov, 2019
- Exam-Free Postgraduate Recommendation - Oct, 2017
- Academic Scholarship Award (Class C) - Sep, 2017
- Academic Scholarship Award (Class C) - Sep, 2016
- Academic Scholarship Award (Class C) - Sep, 2015

TEACHING EXPERIENCE

- **The Chinese University of Hong Kong, Shenzhen** Shenzhen, China
HSS 1009 Mathematics *Sep. 2019 - Jan. 2020*
 - Taught SPSS and introductory statistics in English for four classes.
 - Designed rubrics and scored assignments and exams for 142 students.
- **The Hong Kong Polytechnic University** Hong Kong, China
APSS 5060 Advanced Cognitive Psychology *Oct. 2022 - Present*
 - Organized and conducted behavioral experiments with graduate students.
 - Created digital exams using Qualtrics; wrote R code to convert short answers in Excel spreadsheets to Word documents, which were then submitted to VeriGuide in bulk for similarity text detection.
 - Provided guidance to graduate students on writing the portfolio of their individual projects.

REFEREES

- Prof. Xiaotian Wang, The Chinese University of Hong Kong, Shenzhen, xtwang@cuhk.edu.cn
- Prof. Yin Wu, The Hong Kong Polytechnic University, y.wu@polyu.edu.hk
- Prof. Shi Yu, The Chinese University of Hong Kong, Shenzhen, yushi1129@cuhk.edu.cn