

MAC STRELIOFF

Computational Neuroscientist (Ph.D.) & Statistician (M.S.)

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HIGHLIGHTS

- 8+ years experience with rigorous statistical and experimental methods in economic and behavioral sciences
- 6+ years statistical computing experience in R, Python, and Matlab
- Statistical consulting experience with the U.S. Army Research Laboratory, and the UCI Division of Continuing Education
- My research involves adapting machine learning algorithms to model human behavior and decision making

PROFESSIONAL EXPERIENCE

Graduate Student Researcher

Cognitive Psychometrics Lab, Pls: Michael Lee and Bill Batchelder

2014-Present Irvine, CA

- Initiated a collaboration with a large online prediction market servicer, this granted access to all data in over 1500 markets (5.21GB).
- Created a well documented and reproducible workflow to analyze this large dataset and communicate findings.

Learning and Decision Neuroscience Lab, Pl: Mimi Liljeholm

2014 - Present Irvine, CA

- Developed cognitively plausible reinforcement learning models and designed experiments that could arbitrate between these different explanations of human reinforcement learning.
- Designed experiments to assess the influence of conditioned stimuli on intertemporal preferences
- Designed experiments to identify neural substrates of decoy effects in perceptual and consumer decision making

Statistical Consultant

U.S. Army Research Laboratory, Pls: Anthony Passaro and Ben Files

Summer 2018 Playa Vista, CA

- Applied standard and novel machine learning methods to predict correct responses on a go-nogo task from EEG data.
- Created reproducible and well documented code to validate an implementation of Bayesian sparse reduced rank regression and communicate my validation procedure to colleagues

Client: Dave Dimas, Director of Engineering, Sciences, and Technology Programs at University of California Irvine

2017 Irvine, CA

- Compiled a report on effects of pre-recorded lectures on grades

Undergraduate Student Researcher

University of California, Davis, Honors Thesis, Pl: Keith Widaman

2012 - 2014 Davis, CA

- Conducted path analyses to assess resilience in a sample of 650+ Mexican-American children from a longitudinal dataset

College of the Canyons

2010 - 2012 Santa Clarita, CA

- Initiated a research and social outreach partnership with the Heroic Imagination Project aimed at reducing prejudice and discrimination.

SKILLS

- Stat. Consulting
- Bayesian Modeling
- Statistical Reporting
- Meta Analysis
- Statistical Inference
- Reproducibility
- Hypothesis Testing
- Power Analysis
- Data Preprocessing
- Machine Learning
- Experimental Design
- Scientific Writing
- Model Building
- Hierarchical Modeling
- A/B Design Testing
- Data Visualization

PROGRAMMING

- R
- MATLAB
- R Markdown
- Python
- JAGS
- JASP
- SQL
- Stan
- SPSS
- LaTeX

AWARDS & HONORS

- National Science Foundation GRFP Honorable Mention
- UCI Associate Deans Fellowship (\$6,600)
- Into the Bullpen Business Idea Competition 1st Place Winner
- UC Davis Regents Scholarship and Stipend (\$21,826)

EDUCATION

Ph.D. Cognitive Sciences
University of California, Irvine

2014 - 2019*
*Can be completed earlier as needed

M.S. Statistics
University of California, Irvine

2016-2018

M.S. Cognitive Neurosciences
University of California, Irvine

2014-2016

B.S. Psychology with Mathematics
Emphasis

University of California, Davis

2012 - 2014

IN PREPARATION

1. Strelioff, M., Stokes, R., & Lee, M. (in prep). Prediction market prices reflect individual-level limitations in probabilistic reasoning.
2. Strelioff, M., & Liljeholm, M. (in prep). Structural Inferences About Latency-Modified Schedules.
3. Strelioff, M. & Liljeholm, M. (in prep). The role of causal inference in human reinforcement learning.
4. Files, B. & Strelioff, M. (in prep). Bayesian Reduced Rank Regression with Stan.

PEER-REVIEWED PROCEEDINGS

1. Strelioff, M. & Liljeholm, M. (2017). *Actions that modify schedules of reinforcement*. In Gunzelmann, G., Howes, A., Tenbrink, T., & Davelaar, E. (Eds.), *Proceedings of the 39th Annual Conference of the Cognitive Science Society*, pp. 3261-3266.

TALKS

1. Strelioff, M. (2018). *Learning to control schedules of reinforcement: Implications for social media addiction*. UC Irvine Center for Addiction Neuroscience (ICAN) Symposium. Irvine, CA.

POSTERS

1. Strelioff, M., Stokes, R., & Lee, M. (2018). Judgement and decision making biases in prediction markets. *Society for Judgment and Decision Making Annual Meeting*. New Orleans, LA.
2. Sumner, E., Palmeri, H., Strelioff, M., Cohen, H., & Kidd, C. (2018). Exploring how children handle uncertainty. *Cognitive Science Society 2018 Workshop: Understanding Exploration-Exploitation Trade-offs*. Madison, WI.
3. Strelioff, M. & Liljeholm, M. (2017). Structure learning for action-modified schedules of reinforcement. *The 50th Annual Meeting of the Society for Mathematical Psychology*. University of Warwick, United Kingdom.
4. Stokes, R. & Strelioff, M. (2017). The Irrationality of Political Prediction Market Prices. *The 50th Annual Meeting of the Society for Mathematical Psychology*. University of Warwick, United Kingdom.
5. Strelioff, M. & Liljeholm, M. (2017). Actions that modify schedules of reinforcement. *Proceedings of the 39th Annual Conference of the Cognitive Science Society*, London, United Kingdom.
6. Strelioff, M. (2014). Meaningful predictors of academic performance, depression, and peer competence for high and low risk youth. *25th annual UC Davis Undergraduate Research Conference*, Davis, California.
7. Shepherd, R.E., Howe, R.R., Dunn, M., Barysaite, R., Trujillo, A.T., Strelioff, M., Diaz, M., Maldonado, A., Trujillo, G., & Loya, A. (2012). Mindful reflection and empathy as remedies to dysfunctional group perception. *92nd Annual Convention of the Western Psychological Association*, San Francisco, California.

TEACHING

Teaching Assistant

University of California, Irvine

📅 2014 – Present 📍 Irvine, CA

Topics: Probability Theory and Statistics, Hypothesis Testing, Inference, Regression

College of the Canyons

📅 2010 – 2012 📍 Santa Clarita, CA

Topics: various topics in psychology

YouTube Tutorials

📅 2017-present

I create conceptual and tutorial videos to help students in statistics

SERVICE

- RLDM Journal Club Leader: I initiated and facilitate a journal club on reinforcement learning and decision making that provides a forum for mentorship and focused discussions between graduate and undergraduate students
- Student's Tea Co-Leader: I facilitate a weekly tea-time with statistics masters alumni and current statistics masters students to foster a sense of community and an understanding of statistics

AFFILIATIONS

American Psychological Association,
Association for Psychological Science,
Bayesian Interest Group at UCI,
Cognitive Science Society,
Psychonomic Society,
Society for Judgment and Decision Making,
Society for Mathematical Psychology,
Western Psychological Association