

Jonathan Skaza

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EDUCATION

University of California, Santa Barbara

PhD Student in Computational Neuroscience

Advisor: Miguel P Eckstein

University of Michigan

MSc in Biostatistics

Advisor: Brisa Sánchez

Bryant University

BSc in Applied Mathematics & Statistics, Applied Economics

Advisor: Brian Blais

EXPERIENCE

Graduate Student Researcher

2024–Present

University of California, Santa Barbara 

Santa Barbara, CA

The Vision and Image Understanding Laboratory at the University of California, Santa Barbara pursues computational modeling of behavioral, cognitive neuroscience, and physiological data to elucidate the mechanisms and neural substrates mediating perception, attention, and learning. We use the knowledge we acquire, in conjunction with tools from computer science and engineering, to improve human performance in life-critical decisions, aid the development of bio-inspired computer vision systems, and optimize the interactions between intelligent machines and humans.

Computational Science Developer

2023–2024

Cold Spring Harbor Laboratory 

Cold Spring Harbor, NY

Computational neuroscience and neuroAI research group. Built connectome-inspired DNNs to understand visual projection neurons (and the computations of visual processing in general) in *Drosophila*. Mentored a talented high school student interested in computational neuroscience.

Analyst II → Senior Analyst → Lead Analyst → Associate Director, Product

2018–2023

Panalgo 

Boston, MA

Panalgo develops software for Real-World Evidence (RWE) studies. The company maps massive healthcare claims and EHR datasets into a data model and

provides a web application to drastically simplify and accelerate patient-level analysis.

Data Scientist

2017–2018

University of Michigan

Ann Arbor, MI

Conducted research involving longitudinal data analysis, functional data analysis, Bayesian hierarchical modeling, data visualization, and data wrangling. Collaborations with University of Michigan Department of Psychiatry and Drexel University Urban Health Collaborative.

Graduate Student Research Assistant

2015–2017

University of Michigan

Ann Arbor, MI

Developed statistical methods and applications in modeling cortisol, a biomarker of stress, as part of a psychoneuroendocrinology study. Member of Biostatistics for Social Impact lab.

Undergraduate Research Assistant

2014–2014

Bryant University

Smithfield, RI

Implemented econometric analyses concerning the economic impact of children, the education system, and the defense industry in the state of Rhode Island.

Summer Institute in Biostatistics

2014–2014

North Carolina State University & Duke University 


Raleigh, NC


Explored the field of biostatistics through lectures, statistical computing labs, and data analysis projects. Sponsored by NHLBI and NCATS.


PUBLICATIONS


Parsa Madinei, Ryan Solgi, Ziqi Wen, Jonathan Skaza, Miguel Eckstein, Ramtin Pedarsani (2025). "INTERLACE: Interleaved Layer Pruning and Efficient Adaptation in Large Vision-Language Models." *arXiv preprint arXiv:2511.19676*. 



Jonathan Skaza, Parsa Madinei, Ziqi Wen, Miguel Eckstein (2025). "DReX: Pure Vision Fusion of Self-Supervised and Convolutional Representations for Image Complexity Prediction." *arXiv preprint arXiv:2511.16991*. 


Ziqi Wen, Jonathan Skaza, Shravan Murlidaran, William Wang, Miguel Eckstein (2025). "Foveated Multi-Modal Large Language Model Maps to Predict Time to Understand Scenes." *Journal of Vision*, 25. 

Jonathan Skaza, Shravan Murlidaran, Apurv Varshney, Ziqi Wen, Miguel P Eckstein, Michael Beyeler (2025). "A Computational Virtual Patient Pipeline for Predicting Perceptual Capabilities with Visual Prostheses." *Journal of Vision*, 25. 


Ziqi Wen, Jonathan Skaza, Shravan Murlidaran, William Y Wang, Miguel P Eckstein (2025). "Predicting Reaction Time to Comprehend Scenes with Foveated Scene Understanding Maps." *arXiv preprint arXiv:2505.12660*. 


Shravan Murlidaran, Ziqi Wen, Jonathan Skaza, William Wang, Miguel P Eckstein (2025). "Semantic Saliency from Multi-Modal Large Language Model Scene Understanding Maps.". 

Jonathan Skaza, Shravan Murlidaran, Apurv Varshney, Ziqi Wen, William Wang, Miguel P Eckstein, Michael Beyeler (2025). "A Deep Learning Framework for Predicting Functional Visual Performance in Bionic Eye Users." *bioRxiv*.  

Jonathan S Skaza, Erin Wong, Arie Matsliah, Benjamin R Cowley (2024). "Data-driven deep neural network models of visual processing in Drosophila." *Cognitive Computational Neuroscience*. 


Stefanie E Mayer, James L Abelson, Hedieh Briggs, Jonathan Skaza, Clemens Kirschbaum, Tobias Stalder (2019). "How does hair cortisol assessment correspond to saliva measures and to lab-based probes of HPA axis regulatory function?." *Psychoneuroendocrinology*, 107. 

James L Abelson, Brisa Sanchez, Xingyu Zhang, Israel Liberzon, Hedieh Briggs, Jonathan Skaza (2019). "Does salivary cortisol reflect key regulatory control aspects HPA axis functioning in healthy humans?." *Psychoneuroendocrinology*, 107. 


James L Abelson, Clemens Kirschbaum, James Herman, Jonathan Skaza, Brisa Sanchez (2019). "Daily diurnal salivary curves: Are they too noisy to be useful?." *Psychoneuroendocrinology*, 107. 


Jiaxuan Wang, Ian Fox, Jonathan Skaza, Nick Linck, Satinder Singh, Jenna Wiens (2018). "The advantage of doubling: a deep reinforcement learning approach to studying the double team in the NBA." *arXiv preprint arXiv:1803.02940*. 

Jonathan Skaza, Brian Blais (2017). "Modeling the infectiousness of Twitter hashtags." *Physica A: Statistical Mechanics and its Applications*, 465. 


L Beaudin, J Skaza (2015). "Measuring the total impact of demographic and behavioural factors on the risk of obesity accounting for the depression status: a structural model approach using new BMI." *Applied Economics*, 47. 


Jonathan S Skaza (2015). "Mathematical modeling of trending topics on twitter.". 



Jonathan Skaza (2014). "Socioeconomic Determinants of Obesity in the United States." *Empirical Economic Bulletin, An Undergraduate Journal*, 7. 


Jonathan Skaza, Brian Blais (2013). "The relationship between economic growth and environmental degradation: exploring models and questioning the existence of an environmental Kuznets curve." *The Center for Global and Economic Studies at Bryant University Working Paper*. 

CONFERENCES & TALKS

Shravan Murlidaran, Ziqi Wen, Jonathan Skaza, Miguel P Eckstein (2025). "Scene Understanding Maps: Predicting Most Frequently Fixated Object during Scene Description with Multi-Modal Large Language Models." *Vision Sciences Society*, St. Pete Beach, FL, USA. 

Ziqi Wen, Jonathan Skaza, Shravan Murlidaran, William Yang Wang, Miguel P Eckstein (2025). "Foveated Multi-Modal Large Language Model Maps to Predict Time to Understand Scenes." *Vision Sciences Society*, St. Pete Beach, FL, USA. 

Jonathan Skaza, Shravan Murlidaran, Apurv Varshney, Ziqi Wen, William Yang Wang, Miguel P Eckstein, Michael Beyeler (2025). "A Computational Virtual Patient Pipeline for Predicting Perceptual Capabilities with Visual Prostheses." *Vision Sciences Society*, St. Pete Beach, FL, USA.  

Jonathan Skaza, Erin Wong, Arie Matsliah, Benjamin R Cowley (2024). "Data-driven deep neural network models of visual processing in *Drosophila*." *Cognitive Computational Neuroscience*, Boston, MA, USA. 

SOFTWARE

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FUNDING & SUPPORT

Institute for Collaborative Biotechnologies (ICB)  2025

UC Noyce Initiative  2024-2025

AWARDS

Sanjay Gupta Family Hackathon Winner 2018

SAS Institute Award (Top Applied Mathematics Undergraduate) 2015

Excellence in Economics Award (Top Economics Undergraduate) 2015

Bryant University Honors Program 2011-2015

Undergraduate Research Grant 2013

SELECT COURSEWORK

Bayesian Inference, Behavioral Neuroscience, Cognitive Psychology, GLMs, Longitudinal Analysis, Machine Learning, Modeling and Optimization of Neural Networks, Models of Neural Circuits, Neuroanatomy, Philosophy of AI, Probability, Statistical Computing, Survival Analysis, Visual Perception