

Jordan Lei

jordanlei.work@gmail.com | jordanlei.com | [Github](#) | [Google Scholar](#) | (503) 516 5516

Experience

New York University

Aug 2021 – May 2026 (Expected)

Neuroscience PhD Candidate - Ma Lab

New York, NY

Modeling complex planning in humans and animals with reinforcement learning and deep learning

- **How do nonhuman primates plan strategically?** Using deep learning models to predict how monkeys plan in board games, modeling behavior, gaze, and neural activity. Key finding: monkeys use feature-based reasoning in complex planning games.
 - ♦ Lei J., Park M.-Y., Oemisch M., van Opheusden B., Osborne K., Liang H., Ferguson M., Lee D., Ma W.J., Choice and Deliberation in a Complex Planning Game in Monkeys, **Contributed Talk at RLDM 2025.**
 - ♦ Lei J., Park M.-Y., Oemisch M., van Opheusden B., Osborne K., Liang H., Ferguson M., Lee D., Ma W.J., Choice and Deliberation in a Complex Planning Game in Monkeys, Poster presented at COSYNE 2024.
 - ♦ Park M.-Y., Lei J., Oemisch M., Liang H., van Opheusden B., Ma W.J., Lee D., Multiplexing of Value Signals in the Primate Frontostriatal Network during a Strategy Board Game, Poster presented at SfN 2024
- **How does stochasticity affect planning effort?** Designed, implemented, and analyzed an online experiment end-to-end—developing computational models to reveal how people adapt planning depth in uncertain environments. Planning effort decreases as stochasticity increases; a finding validated across three novel experimental paradigms.
 - ♦ (In Revision) Lei, J., Olieslagers, J., Arfaei, N., Lin, D. X., Ma, W. J. (2025). Human Planning in Stochastic Environments. *psyArXiv*. 2025-05. **Pending Revision at Nature Communications, 2025.**
 - ♦ Lei, J., & Ma, W. J. (2024). Uncertainty affects planning effort, but not plans. In *Proceedings of the Annual Meeting of the Cognitive Science Society* (Vol. 46).
 - ♦ Lei, J., & Ma, W. J. Uncertainty affects planning effort, but not plans, Poster presented at CogSci 2024
- Awards: 2023 Training Program in Computational Neuroscience Grant, 2021 Henry M. MacCracken Fellowship

Point72 Asset Management

May 2025 – July 2025

Quantitative Research Intern

New York, NY

Building behavioral models of portfolio manager skill and cognitive biases

- Built statistical models to evaluate PM performance, uncover systematic cognitive biases (e.g. disposition asymmetry) and optimize signals for alpha generation
- Proposed and implemented Elo scoring to rank PMs, enabling sector specific and market group specific assessments for reliability and scalability: **\$180M GMV improvement** and **4bps Sharpe increase** in backdated simulations from 2017-2023

University of Pennsylvania

May 2020 – May 2021

Research Assistant - Kording Lab

Philadelphia, PA

Developing neurobiologically inspired computer vision models of object-based attention

- Incorporated convolutions, recurrence, encoder-decoder architectures, and custom loss functions to build a model that replicates key features of biological attention, including lateral connectivity, scene segmentation, and inhibition of return.
 - ♦ (In Review) Salehinajafabadi, S., Lei, J., Benjamin, A. S., Muller, K. R., & Kording, K. P. (2025). Modeling Attention and Binding in the Brain through Bidirectional Recurrent Gating. *bioRxiv*, 2024-09. **Revision in review at Nature Communications, 2025.**

Education

New York University | GPA: 3.9/4.0

(Expected) May 2026

PhD Candidate, Neuroscience; Thesis: “Neural and Cognitive Mechanisms of Complex Planning”, Advisor: Wei Ji Ma

University of Pennsylvania | GPA: 4.0/4.0, Summa Cum Laude

May 2021

MSE, Computer Science; Thesis: “Object-Based Attention Through Internal Gating”, Advisor: Konrad Kording

University of Pennsylvania | GPA: 3.9/4.0, Summa Cum Laude

May 2020

BS in Engineering, Computer Science, School of Engineering and Applied Sciences

BS in Economics, Operations/Information/Decisions, The Wharton School

Jerome Fisher Program in Management and Technology (M&T), National Merit Scholar

Skills & Interests

- **Skills:** Deep Learning, Reinforcement Learning, Computer Vision (CNNs, Autoencoders), Language Models (RNNs, Transformers), Generative Models, Neuroscience, Cognitive Science, Bayesian Modeling & Optimization, Reasoning/Planning Models
- **Computer Languages:** Python (PyTorch, TensorFlow, Keras), MATLAB, Java, C/C++, JavaScript (React)
- **Interests:** Life drawing at museums, community organizing (co-President of student council, lead web designer for *Growing Up in Science*), podcasts (favorites: *Dear Hank & John*, *SciShow Tangents*), running, competitive swimming