

MICHAEL PSENKA

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Reinforcement learning, world models, AI+bio/chem. *Prev. mathematician*

tl;dr: Adapting pretrained models beyond initial capabilities. Geometric and variational approaches through model structure. Searching for durable unifying principles, across domains, for engineering general-purpose intelligence.

EDUCATION

UC Berkeley, *PhD* in Electrical Engineering and Computer Science Aug 2021 – present
GPA: 4.0/4.0 major, 3.95 overall. Stand-in prof. for discrete math & probability (CS 70), TA robotics (EECS 106B).

Princeton University, *B.A.* in Mathematics (minors: CS, Applied Math) Aug 2017 – May 2021
GPA: 3.6/4.0. *Department awards:* Greenberg Memorial Prize (mathematics, **solved open problem**), Manfred Pyka Memorial Prize (physics). HackPrinceton 1st place.

WORK EXPERIENCE

Research Scientist Intern w/ Yann LeCun @ Meta May – Dec 2025
• Planning and reasoning for world models. Created new SOTA planner, scales to modern video world models.

Co-head Instructor @ UC Berkeley Jun – Aug 2022
• Organized and taught an undergraduate course on discrete math and probability theory. [Link to class page](#).

Undergraduate Researcher @ Princeton, Stanford Jun – Sept '19, '20
• (Princeton) Developed SOTA optimization algorithm for handling curvature over tensor train manifolds.
• (Stanford) Developed computer vision algorithm for multi-view reconstruction bypassing pairwise registration.

Machine Learning & AI Engineer @ Moovila, Inc. Jan – April 2025, Jun – Aug 2018, '17, '16
Selected contributions:

- Co-inventor on a patent for proprietary software, mathematical modeling for visualizing large-scale connections. Remains a core component of the primary software delivered to all customers.
- Helped develop a custom integrated LLM chatbot and tooling for increased functionality and ease of use.

SELECTED PUBLICATIONS

Parallel Stochastic Gradient-Based Planning for World Models. [Michael Psenka](#), Michael Rabbat, Aditi Krishnapriyan, Yann LeCun*, Amir Bar*. *submitted to ICML 2026*. [Paper](#). [Code](#).

Action-Minimization Meets Generative Modeling: Efficient Transition Path Sampling with the Onsager-Machlup Functional. Sanjeev Raja*, Martin Šípka*, [Michael Psenka*](#), Tobias Kreiman, Michal Pavelka, Aditi S. Krishnapriyan. *ICML 2025*. [Paper](#). [Code](#).

Learning a Diffusion Model Policy from Rewards via Q-Score Matching. [Michael Psenka*](#), Alejandro Escontrela*, Pieter Abbeel, Yi Ma. *ICML 2024*. [Paper](#). [Code](#).

Representation Learning through Manifold Flattening and Reconstruction. [Michael Psenka](#), Druv Pai, Vishal Raman, Shankar Sastry, Yi Ma. *JMLR*. [Paper](#). [Code](#).

SKILLS

Research RL, world models, diffusion models / stochastic interpolants, control theory, differential geometry
Tools PyTorch, JAX, Python, C, C#, Linux, Git, Shell, AWS

INTERESTS

Piano, snowboarding, boxing, skateboarding, pole vaulting, music production, chess, mac and cheese, whiskey