# Jules Berman

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## Summary

**Third-year PhD candidate** building fast generative models for video and PDE-based physics simulation. First author on **4 NeurIPS/ICML papers** and **Harold Grad Prize winner** (top PhD '24). My work spans:

- **scalable one-step video generation**—SOTA one-step for video, synthesizing 480p clips in real time
- **neural surrogates that accelerate physics simulation** by >100× while preserving physical fidelity

## Education

Ph.D., Computer Science — New York University, Courant Institute. GPA 3.9. Expected 2026
*Awards:* Harold Grad Memorial Prize (top PhD student, 2024) · MacCracken Fellowship (full award)
*Advisor:* Benjamin Peherstorfer

B.S., Computer Science — New York University. May 2017
*Awards:* cum laude

## Select Publications

*Stochastic Lifting for One-Step Per-Frame Video Generation and Physics Simulation* ***in review*** ▪ **NeurIPS 2025**
[arxiv] **J. Berman**, T. Blickhan, B. Peherstorfer.

*Parametric model reduction of [...] stochastic systems via higher-order action matching* **NeurIPS 2024**
[arxiv] **J. Berman**, T. Blickhan, B. Peherstorfer.

*CoLoRA: Continuous low-rank adaptation for reduced neural modeling [...]* **ICML 2024**
[arxiv] **J. Berman**, B. Peherstorfer.

*Randomized Sparse Neural Galerkin Schemes with Deep Networks* ***spotlight*** ▪ **NeurIPS 2023**
[arxiv] **J. Berman**, B. Peherstorfer.

## Experience

**Google** May 2025 – Aug 2025
*Research Engineer Intern (Current)*
Research on deep state-space models (S5) with novel singular-value regularization for model compression.

**Meta** May 2024 – Aug 2024
*Research Scientist Intern*, CTRL-Labs
Designed and trained diffusion-based generative models of EMG data, improving downstream gesture classification accuracy by 10% through synthetic data augmentation.

**Flatiron Institute** May 2021 – Aug 2022
*Research Analyst*, Center for Computational Neuroscience
Architected a distributed training platform for large-scale experiments (100k+ VAEs) and developed novel representational metrics enabling in-depth comparative analyses.

**Bloomberg LP** April 2018 – April 2021
*Senior Software Engineer*, Global Infrastructure Team
Led full-stack build of infrastructure procurement portal used by 2000+ engineers weekly; deployed ML-based predictive systems to forecast future infrastructure demands from historical usage data.

## Skills

Software: Python · JAX · PyTorch · Flax · NumPy · SLURM · Git · LaTeX
Service: Reviewer at NeurIPS, ICLR, ICML; Mentor for MS student;