

# Mohit Kulkarni

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## EDUCATION

<b>ETH Zurich and University of Zurich</b> <i>M.Sc, Neural Systems and Computation</i>	<i>2023 – 2025</i>
<b>Indian Institute of Technology, Kanpur</b> <i>B.S, Mathematics and Scientific Computing. Minor in Machine Learning</i>	<i>2019 – 2023</i>



## PUBLICATIONS

- Kulkarni, M.\***, Chaudhry, H.\*, Pehlevan, C. “From Recall to Reasoning: Understanding the Role of Associative Memory in Hybrid Architectures” Submitted to ICLR 2026.
- Chaudhry, H.\*, **Kulkarni, M.\***, Pehlevan, C. “Test-time scaling meets associative memory: Challenges in subquadratic models.” ICLR workshop on New Foundations in Associative Memory, 2025.
- Daie, K., . . . , **Kulkarni, M.**, Botvinick, M.M., Svoboda, K. “Optical brain computer interface for measuring circuit plasticity during learning.”, In preparation.

## EXPERIENCE

<b>Incoming Research Intern, Cohere</b>	<i>Dec 2025 – May 2026</i>
<b>Research Assistant, Emerge Lab, New York University</b> Prof. Eugene Vitisnky <ul style="list-style-type: none"><li>Investigating meta-RL methods for k-shot adaptation to enable agents to rapidly align with cooperative partners.</li><li>Developed a high-performance <b>welfare-diplomacy</b> simulator in <b>pufferlib</b> to study emergent cooperation and welfare in multi-agent reinforcement learning.</li></ul>	<i>Aug 2025 – Present</i>
<b>Research Fellow, SEAS, Harvard University</b> Prof. Cengiz Pehlevan <ul style="list-style-type: none"><li>Explored efficiency versus reasoning trade-offs in linear attention and hybrid architectures. Pre-trained and scaled inference for hybrid models of size 150M-1.3B to understand mathematical reasoning capabilities.</li><li>Designed and implemented an experimental framework for pretraining and fine-tuning hybrid architectures combining <b>flash-linear-attention</b> and OLMo.</li></ul>	<i>Sep 2024 – Aug 2025</i>
<b>Research Assistant, Allen Institute for Neural Dynamics</b> Dr. Karel Svoboda, Dr. Kayvon Daie <ul style="list-style-type: none"><li>Built a scalable and efficient data analysis pipeline on GCP using DataJoint. Developed RNN models to understand learning in biological and artificial networks, comparing model predictions with experimental <b>2-Photon</b> recordings.</li></ul>	<i>Sep 2020 – May 2023</i>

## SELECTED PROJECTS

<b>GPU-accelerated Terminal Emulator</b>   <i>Personal Project</i>	<a href="#">GITHUB</a> 
<ul style="list-style-type: none"><li>Developed a C++/OpenGL based terminal emulator with support for colors, advanced text rendering (ANSI X3.64) and ligatures; now integrating LLM function calling for seamless in-terminal AI capabilities.</li></ul>	
<b>Spiking Neural Network Benchmark</b>   <i>SNUFA Workshop</i>	<a href="#">WEBSITE</a> 
<ul style="list-style-type: none"><li>Created SNUFA100 and SNUFA100_sentence datasets for evaluating Spiking Neural Networks; implemented baseline with surrogate gradient descent.</li></ul>	

## HONORS AND AWARDS

<b>AI Startup School Travel Grant</b>   Y Combinator	<i>2025</i>
<b>Heyning-Roelli Foundation Scholarship</b>   For Masters Thesis at Harvard	<i>2024</i>
<b>Brain Computation and Learning Workshop Travel Grant</b>   IISc Bangalore	<i>2023</i>
<b>Cosyne 2022, Undergraduate Travel Grant</b>   Lisbon, Portugal	<i>2022</i>
<b>INSPIRE Scholarship</b>   Awarded throughout Bachelors	<i>2019 – 2023</i>
<b>All India Rank 637</b>   JEE Advanced	<i>2019</i>