

KABIR SWAIN

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ABOUT ME

My research experience has focused on **computer vision**, **large language models**, **efficient scaling**, and **architectures**.

Currently, I'm at MIT CSAIL as a Ph.D. student in EECS, advised by Prof. Antonio Torralba.

EDUCATION

Massachusetts Institute of Technology *Expected 2028*
Ph.D, EECS, Advised by Prof. Antonio Torralba

Massachusetts Institute of Technology *Expected 2026*
S.M, EECS, Advised by Prof. Antonio Torralba

KTH Royal Institute of Technology *2023*
S.B, Electronics and Computer Engineering

WORK EXPERIENCE

LightScale Inc. Nov 2025 - Present
Founder

Stealth AI Startup May 2025 - Oct 2025
Artificial Intelligence Researcher *San Francisco Bay Area, CA*

RESEARCH EXPERIENCE

CSAIL, Massachusetts Institute of Technology August 2023 - Present
Graduate Researcher advised by Professor Antonio Torralba *Cambridge, MA*

CSAIL, Massachusetts Institute of Technology May 2022 - June 2023
Visiting Student working with Professor Antonio Torralba *Cambridge, MA*

CSAIL, Massachusetts Institute of Technology February 2021 - April 2022
Research Intern working with Prof. Torralba, Dr. S Li, Dr. X Puig *Cambridge, MA*

Harvard-MIT May 2020 - December 2021
Research Intern working with Prof. Karp, Prof. Joshi, Dr. Joseph *Cambridge, MA*

Harvard-MIT Summer 2015
Research Intern working with Prof. Karp, Prof. Joshi *Cambridge, MA*

PUBLICATIONS

Tensor Memory: Fixed-Size Recurrent State for Long-Horizon Transformers
Kabir Swain, Sijie Han, Daniel Karl I. Weidele, Mauro Martino, Antonio Torralba

Tensor Cache: Eviction-conditioned Associative Memory for Transformers
Kabir Swain, Sijie Han, Daniel Karl I. Weidele, Mauro Martino, Antonio Torralba

EnvDreamer: Large-Scale Environment Generation for Embodied AI

Kabir Swain, Sijie Han, Antonio Torralba

VirtualEnv: A Platform for Embodied AI Research

Kabir Swain, Sijie Han, Ayush Raina, Jin Zhang, Shuang Li, Michael Stopa, Antonio Torralba

AWARDS & HONORS

Apple Inc. Student Scholarship Winner

2014

SKILLS

Programming Language

Python, C/C++, CUDA, Javascript, Java, Swift

ML Libraries

PyTorch, NumPy, Jax, TensorFlow