

# Shengbang Tong

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## Education

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### New York University, Courant Institute

Aug 2023 - Present

- Ph.D in Computer Science
- Advisors: Prof. Yann LeCun, Prof. Saining Xie

### The University of California, Berkeley

Aug 2019 - May 2023

- Bachelor of Arts: Applied Mathematics (Honor), Computer Science, Statistics (Honor)
- GPA: 3.85/4.00
- Advisors: Prof. Yi Ma, Prof. Jacob Steinhardt
- PhD Level Courses: High Dim Data Analysis with Low-Dim Models, Introduction to Machine Learning, Convex Optimization, Optimization Models, Convex Optimization Algorithms, Matrix and Numerical Linear Algebra, Design of Societal Scale System and Games, Deep Reinforcement Learning, Theoretical Statistics

## Selected Publications & Preprints

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(\* means equal contribution, see full publications in <https://scholar.google.com/citations?hl=en&user=hYlbtI8AAAAAJ>)

- **Shengbang Tong\***, Erik Jones\*, Jacob Steinhardt, *Mass-Producing Failures of Multimodal Models*, Under Review
- **Shengbang Tong\***, Yubei Chen\*, Yi Ma, Yann Lecun, *EMP-SSL: Towards Self-Supervised Learning in One Training Epoch*, Under Review, <https://arxiv.org/abs/2304.03977>
- **Shengbang Tong**, Xili Dai, Ziyang Wu, Mingyang Li, Brent Yi, Yi Ma, *Incremental Learning of Structured Representation via Closed-Loop Transcription*, ICLR 2023, <https://openreview.net/forum?id=XrgjF5-M3xi>
- Xili Dai\*, **Shengbang Tong\***, Mingyang Li\*, Ziyang Wu\*, Kwan Ho Ryan Chan, Pengyuan Zhai, Yaodong Yu, Michael Psenka, Xiaojun Yuan, Heung Yeung Shum, Yi Ma, *Closed-Loop Transcription to an LDR via Minimizing Rate Reduction*, Entropy Journal 2021, <https://www.mdpi.com/1099-4300/24/4/456>

## Research Experiences

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### Berkeley Artificial Intelligence Research (BAIR), UCB

Oct 2022 - May 2023

Undergraduate Research Assistant, Advisor: Prof. Jacob Steinhardt

- Explored adversarial examples in multimodal models such as Vision Language Models.
- Proposed a novel algorithm for automatically finding failures in multimodal models.

### Center for Data Science, NYU

June 2022 - Aug 2022

Summer Research Assistant, Advisor: Prof. Yann LeCun & Dr. Yubei Chen

- Worked on proposing new efficient and effective self-supervised learning methods.
- Leveraged the principle of joint-embedding SSL and improved existing SSL methods.

### Berkeley Artificial Intelligence Research (BAIR), UCB

June 2021 - May 2023

Undergraduate Research Assistant, Advisor: Prof. Yi Ma

- Proposed unified learning framework for both discriminative and generative models.
- Developed learning methods in extreme settings such as continual learning and unsupervised learning.
- Explored convolutional sparse modeling layers in deep learning on image classification and generation tasks.

## ACADEMIC SERVICES

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- Reviewer for ICML 2022/2023, CVPR 2023, ICCV2023, NIPS 2022/2023

## SKILLS, CERTIFICATIONS & OTHERS

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- Skills: PyTorch, Python, JAVA, R, Matlab