Sachin Goyal

Ph.D. Student, Machine Learning Department
Carnegie Mellon University
Advisor: Prof. Zico Kolter

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EDUCATION

Carnegie Mellon University — *Pittsburgh, US*
Ph.D. in Machine Learning — *August '21 - Jan '26 (expected)*
Advisor: Prof. Zico Kolter

Indian Institute of Technology Bombay — *India*
B.Tech in Electrical Engineering with Minors in Computer Science and Engineering — *July '15 - August '19*
GPA: 9.11/10
Advisor: Prof. Subhasis Chaudhuri

WORK EXPERIENCE

Google Research, NYC — *NYC*
Student Researcher — *May '23 - September '23*
Advisor: Dr. Vaishnavh Nagarajan
Worked on pause tokens to improve LLM reasoning at inference, resulting in ICLR 2024 paper on "Think Before You Speak: Training Language Models With Pause Tokens".

Microsoft Research, India — *Bangalore*
Research Fellow in Machine Learning and Optimization Group — *July '19 - June '21*
Advisors: Dr. Prateek Jain and Dr. Harsha Vardhan Simhadri
Worked on resource-efficient machine learning resulting, resulting in ICML 2020 paper on "DROCC: Robust One-Class Classification".

RESEARCH INTERESTS

Improving pretraining and inference efficiency of foundation models, data curation, inference time scaling

SELECTED PUBLICATIONS

Context-Parametric Inversion: Why Instruction Finetuning May Not Actually Improve Context Reliance
Sachin Goyal*, Christina Baek*, Zico Kolter, Aditi Raghunathan
ICLR 2025

Inference Optimal VLMs Need Only One Visual Token but Larger Models
Kevin Li*, Sachin Goyal*, João D. Semedo, Zico Kolter
ICLR 2025

Scaling Laws for Data Filtering–Data Curation cannot be Compute Agnostic
Sachin Goyal*, Pratyush Maini*, Zachary Lipton, Aditi Raghunathan , Zico Kolter
Data Problems for Foundation Models @ ICLR 2024 (Best Paper Award)
CVPR 2024

Think before you speak: Training Language Models With Pause Tokens
Sachin Goyal, Ziwei Ji, Ankit Singh Rawat, Aditya Krishna Menon, Sanjiv Kumar, Vaishnavh Nagarajan
ICLR 2024

T-MARS: Improving Visual Representations by Circumventing Text Feature Learning
Pratyush Maini*, Sachin Goyal*, Zachary Lipton, Zico Kolter, Aditi Raghunathan
Datacomp Workshop @ ICCV 2023 (Oral)
ICLR 2024

Finetune like you pretrain: Improved finetuning of zero-shot vision models
Sachin Goyal, Ananya Kumar, Sankalp Garg, Zico Kolter, Aditi Raghunathan.
CVPR 2023

Test Time Adaptation via Conjugate Pseudo-Labels
Sachin Goyal*, Mingjie Sun*, Aditi Raghunathan and Zico Kolter.
NeurIPS, 2022

DROCC: Deep Robust One-Class Classification.
Sachin Goyal, Aditi Raghunathan, Moksh Jain, Harsha Simhadri and Prateek Jain.
ICML, 2020

Student Mentorship

Pranit Chawla : MS Student @ CMU MLD → Applied Scientist @ Apple
Pitfalls in Instruction-tuning of language models.

Sankalp Garg : MS Student @ CMU MLD → Applied Scientist @ Amazon
Robust fine-tuning of image-language models.

Kushal Majmundar : Pre-doc Researcher @ Google Research India
Representation learning for unstrcutured tabular data.

Shubhang Bhatnagar : UG Student @ IIT Bombay → PhD Student @ UIUC
Active learning and efficient training of neural networks.

Miscellaneous

Service
- Conference Reviewing: NeurIPS (2022, 2023, 2024), ICML (2023, 2024, 2025), ICLR (2022, 2023, 2024), PODS @ ICML' 22, SafeML @ NeurIPS' 22, AISTATS' 23
- Undergraduate Teaching Assistant : Biology 101   2017
- Hostel System Administrator , IIT Bombay   2019
- National Cadet Corps (NCC), Indian Air Force   '15-'17

References

Prof. Zico Kolter
Associate Professor, Carnegie Mellon University
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Prof. Aditi Raghunathan
Assistant Professor, Carnegie Mellon University
Contact: raditi@cs.cmu.edu

Dr. Vaishnavh Nagarajan
Research Scientist, Google AI
Contact: vaishnavh@google.com