

# Sachin Goyal

Ph.D. Student, Machine Learning Department  
Carnegie Mellon University  
Advisor: [Prof. Zico Kolter](#)

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## EDUCATION

**Carnegie Mellon University**  
Ph.D. in Machine Learning  
Advisor: [Prof. Zico Kolter](#)

Pittsburgh, US  
August '21 - Dec '25 (expected)

**Indian Institute of Technology Bombay**  
B.Tech in Electrical Engineering with Minors in Computer Science and Engineering  
**GPA: 9.11/10**  
Advisor: [Prof. Subhasis Chaudhuri](#)

India  
July '15 - August '19

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## WORK EXPERIENCE

**FAIR at Meta, Paris**  
Research Scientist Intern  
Advisor: [Kartik Ahuja](#) and [David Lopez-Paz](#)

Paris  
May '25 - August '25

Worked on understanding *distilled pretraining* to build small and powerful language models. Also worked on pushing the frontiers of LLMs via *future-aware pretraining*.

**Google Research, NYC**  
Student Researcher  
Advisor: [Vaishnavh Nagarajan](#)

NYC  
May '23 - September '23

Developed *pause-pretraining*, one of the first works to explore scaling language models at inference time.

**Microsoft Research, India**  
Research Fellow in Machine Learning and Optimization Group  
Advisor: [Prateek Jain](#)

Bangalore  
July '19 - June '21

Worked on developing efficient ML algorithms that can be deployed on resource constrained devices.

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## RESEARCH INTERESTS

Improving pretraining of foundation models via data curation and better pretraining algorithms, inference time scaling

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## SELECTED PUBLICATIONS

Full List: [Google Scholar](#)

**Distilled Pretraining: A modern lens of Data, In-Context Learning and Test-Time Scaling**  
Sachin Goyal, David Lopez-Paz, Kartik Ahuja  
*Under Review*

**Safety Pretraining: Toward the Next Generation of Safe AI**  
Pratyush Maini\*, Sachin Goyal\*, Dylan Sam\*, Alex Robey, Yash Savani, Yiding Jiang, Andy Zou, Zachary C. Lipton, J. Zico Kolter  
*Under Review*

**Overtrained Language Models Are Harder to Fine-Tune**  
Jacob Springer, Sachin Goyal, Kaiyue Wen, Tanishq Kumar, Xiang Yue, Sadhika Malladi, Graham Neubig , Aditi Raghunathan  
*SCOPE and ICBINB Workshops @ ICLR 2025 (Best Paper Awards)*  
*ICML 2025*

**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*

**Context-Parametric Inversion: Why Instruction Finetuning**

**May Not Actually Improve Context Reliance**

Sachin Goyal\*, Christina Baek\*, Zico Kolter, Aditi Raghunathan

*ICLR 2025 (Oral)*

**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*

**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*

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## STUDENT MENTORSHIP

**Manan Agarwal** : MS Student @ CMU MLD

Ongoing.

**Catherine Li** : UG Student @ CMU

Ongoing.

**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 unstructured tabular data.

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

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## MISCELLANEOUS

**Service**

- Conference Reviewing: NeurIPS (2022, 2023, 2024, 2025), ICML (2023, 2024, 2025), ICLR (2022, 2023, 2024, 2025), workshops at top conferences
- Teaching Assistant : Advanced Deep Learning 2023, 2024, CMU
- Undergraduate Teaching Assistant : Biology 101 2017, IIT Bombay
- Hostel System Administrator , IIT Bombay 2019
- National Cadet Corps (NCC), Indian Air Force '15-'17

## REFERENCES

**Prof. Zico Kolter**

Professor and Head of Department

Machine Learning Department, Carnegie Mellon University

Contact: zkolt@cs.cmu.edu

**Prof. Aditi Raghunathan**

Assistant Professor, Carnegie Mellon University

Contact: raditi@cs.cmu.edu

**Prateek Jain**

Principal Scientist and Director, Google DeepMind India

Contact: prajain@google.com

**Vaishnavh Nagarajan**

Research Scientist, Google AI

Contact: vaishnavh@google.com

**David Lopez-Paz**

Research Scientist, FAIR at Meta

Contact: dlp@meta.com