Archit Sharma

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Education

Stanford University
*PhD in Computer Science, **Advisor**: Chelsea Finn*   *Jan' 21 – Present*

IIT Kanpur
B.Tech in Electrical Engineering, GPA: 9.9/10   *Jul' 14 – Jun' 18*
Minors: Machine Learning, Linguistics

Experience

Toyota Research Institute   **Los Altos, CA**
Research Intern   *Jun' 23 – Sep' 23*
Fine-tuning large language models.

Google Brain   **Mountain View, CA**
AI Resident   *Jul' 18 – Dec' 20*
Deep reinforcement learning.

IIT Kanpur   **Kanpur, India**
Undergraduate Researcher, Supervisor: Piyush Rai   *Aug' 17 – Apr' 18*
Expectation maximization algorithms for mixture-of-experts.

Mila - Quebec Artificial Intelligence Institute   **Montreal, QC, Canada**
Research Intern, Supervisor: Yoshua Bengio   *May' 17 – Aug' 17*
Gradient estimation across discrete latent variables in deep neural networks.

Selected Articles (* = equal contribution)

Rafael Rafailov*, **Archit Sharma***, Eric Mitchell*, Stefano Ermon, Christopher D. Manning, and Chelsea Finn. *Direct Preference Optimization: You Language Model is Secretly a Reward Model*. Neural Information Processing Symposium (NeurIPS), 2023 (Outstanding Paper Runner Up). `https://openreview.net/forum?id=HPuSIXJaa9`.

Archit Sharma, Shixiang Gu, Sergey Levine, Vikash Kumar, and Karol Hausman. *Dynamics-Aware Unsupervised Discovery of Skills*. International Conference on Learning Representations (ICLR), 2020 (Oral Presentation, <2% rate). `https://openreview.net/forum?id=HJgLZR4KvH`.

Archit Sharma, Sedrick Keh, Eric Mitchell, Chelsea Finn, Kushal Arora, and Thomas Kollar. *A Critical Evaluation of AI Feedback for Aligning Language Large Language Models*. arXiv preprint, 2024.

Lucy Xiaoyang Shi*, **Archit Sharma***, Tony Z. Zhao, and Chelsea Finn. *Waypoint-Based Imitation Learning for Robotic Manipulation*. Conference on Robot Learning (CoRL), 2023. `https://openreview.net/forum?id=XOcmlTh1Vl`.

Jingyun Yang*, Max Sobol Mark*, Brandon Vu, **Archit Sharma**, Jeannette Bohg, and Chelsea Finn. *Robot Fine-Tuning Made Easy: Pre-Training Rewards and Policies for Autonomous Real-World*

Reinforcement Learning. International Conference on Robotics and Automation (ICRA), 2024. `https://arxiv.org/abs/2310.15145`.

Archit Sharma, Ahmed Ahmed, Rehaan Ahmad, and Chelsea Finn. *Self-Improving Robots: End-to-End Autonomous Visuomotor Reinforcement Learning*. Conference on Robot Learning (CoRL), 2023. `https://openreview.net/forum?id=ApxLUk8U-l`.

Katherine Tian, Eric Mitchell, Allan Zhou, **Archit Sharma**, Rafael Rafailov, Huaxiu Yao, Chelsea Finn, and Christopher D. Manning. *Just Ask for Calibration: Strategies for Eliciting Calibrated Confidence Scores from Language Models Fine-Tuned with Human Feedback*. Empirical Methods in Natural Language Processing (EMNLP), 2023. `https://openreview.net/forum?id=g3faCfrwm7`.

Archit Sharma*, Rehaan Ahmad*, and Chelsea Finn. *A State-Distribution Matching Approach to Non-Episodic Reinforcement Learning*. International Conference on Machine Learning (ICML), 2022. `https://proceedings.mlr.press/v162/sharma22a.html`.

Honors

General Proficiency Medal	2018
Graduating with the highest GPA among EE graduates at IIT Kanpur.	
Motorola Gold Medal	2018
Overall achievement among CS/EE graduates at IIT Kanpur.	
Proficiency Prize	2018
Outstanding Undergraduate Research at IIT Kanpur.	
Lalit Narain Das Memorial Scholarship	2018
Best Senior Student in Electrical Engineering, IIT Kanpur	
Sri Singhasan Singh Scholarship	2017
Highest GPA in Electrical Engineering, IIT Kanpur	
Academic Excellence Award	2015, 2016, 2017
Equivalent to Dean's list at IIT Kanpur.	
Joint Entrance Examination	2014
All India Rank 376 out of 150,000 students.	
National Talent Search Scholarship (NTSE)	2010
Awarded to 1000 students by Govt. of India.	

Miscellaneous

Reviewing: ICLR, NeurIPS, CoRL

Mentorship: (*Stanford* undergraduate/MS students) Nikhil Sardana, Rehaan Ahmad, Leo Dong, Fahim Tajwar, Ahmed Ahmed, Sergio Charles, Max Sobol Mark, Lucy Shi

Talks:
- *Beyond RLHF: Simple, Principled and Efficient Fine-tuning of LMs on Human Preferences using DPO*: Stanford, Perplexity AI, DeepMind, Anthropic, Toyota Research Institute, University of Toronto, NeurIPS 2023, Netflix
- *Waypoint-Based Imitation Learning for Robotic Manipulation*: Google DeepMind Robotics
- *Building Autonomous Reinforcement Learning Agents*: Guest Lecture, CS224R @ Stanford.

- *Dynamics-Aware Unsupervised Discovery of Skills*: Oral Presentation at ICLR 2020, Task-agnostic Reinforcement Learning at ICLR 2019 and, Stanford University
- *Towards Autonomous Learning Agents: Challenges and Opportunities in Non-Episodic RL*: Intel, IMPAN RL Seminar
- *On Unsupervised and Autonomous Reinforcement Learning*: Generally Intelligent Podcast

Entry on Google AI Blog: Unsupervised Reinforcement Learning for Skill Discovery

Entry on Stanford AI Laboratory Blog: Self-Improving Robots: Embracing Autonomy in Robot Learning

Teaching: (TA, *Stanford*) CS330: Deep Multi-task and Meta-Learning, (Research mentorship at *IIT Kanpur*) CS698X: Topics in Probabilistic Modeling and Inference