

# Abhinav Java

Research Fellow, Microsoft Research

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## Research Experience

Microsoft Research, India Research Fellow with <a href="#">Amit Sharma</a> , <a href="#">Nagarajan Natarajan</a> , <a href="#">Srivathsan Koundinyan</a> , <a href="#">Vineeth N Balasubramanian</a>	08/2024 – Present
University of Virginia, Visiting Researcher with <a href="#">Chirag Agarwal</a>	03/2024 – 03/2025
Adobe Research, India Research Associate I, II with <a href="#">Balaji Krishnamurthy</a> Research Intern with <a href="#">Balaji Krishnamurthy</a>	05/2021 – 08/2024
Massachusetts Institute of Technology, Collaborator with <a href="#">Ayush Chopra</a> , <a href="#">Ramesh Raskar</a>	03/2021 – 10/2022

## Education

Delhi Technological University, India B.Tech. in Computer Engineering > <a href="#">Research Excellence Award</a> 2022.	08/2018 – 07/2022
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## Publications

\* denotes joint first authorship

### CHARACTERIZING DEEP RESEARCH: A BENCHMARK AND FORMAL DEFINITION

Abhinav Java\*, [Ashmit Khandelwal\\*](#), [Sukruta Midigeshi\\*](#), [Aaron Halfaker](#), [Amit Deshpande](#), [Navin Goyal](#), [Ankur Gupta](#),  
[Nagarajan Natarajan](#), [Amit Sharma](#)  
SEA@NeurIPS '25 (Workshop on Scaling Environments for Agents), Under Review ICLR '26 [1]

### FRUGALRAG: LEARNING TO REASON AND RETRIEVE FOR MULTI-HOP QA

[Abhinav Java](#), [Srivathsan Koundinyan](#), [Nagarajan Natarajan](#), [Amit Sharma](#)  
ER@NeurIPS '25 (Workshop on Efficient Reasoning), Under Review ICLR '26 [2]

### UNDERSTANDING TASK TRANSFER IN VLMS

[Bhuvan Sachdeva\\*](#), [Karan Uppal\\*](#), [Abhinav Java\\*](#), [Vineeth N. Balasubramanian](#)  
UniReps@NeurIPS '25 (Workshop on Unified Representations in Neural Models), Under Review CVPR '26 [3]

### TOWARDS OPERATIONALIZING RIGHT TO DATA PROTECTION

[Abhinav Java\\*](#), [Simra Shahid\\*](#), [Chirag Agarwal](#)  
NAACL (Main) '25, MLDPR@ICLR '25 [4]

### REEDIT: MULTIMODAL EXEMPLAR-BASED IMAGE EDITING

[Ashutosh Srivastava\\*](#), [Tarun Ram\\*](#), [Abhinav Java\\*](#), [Avadhoot Jadav](#), [Silky Singh](#), [Surgan Jandial](#), [Balaji Krishnamurthy](#)  
WACV '25, AI4VA@ECCV '24 [5]

### ALL SHOULD BE EQUAL IN THE EYES OF LMS: COUNTERFACTUALLY AWARE FAIR TEXT GENERATION

[Pragyan Banerjee\\*](#), [Abhinav Java\\*](#), [Surgan Jandial\\*](#), [Simra Shahid\\*](#), [Shaz Furniturewala](#), [Balaji Krishnamurthy](#), [Sumit Bhatia](#)  
AAAI '24 [6]

### THINKING FAIR AND SLOW: ON THE EFFICACY OF STRUCTURED PROMPTS FOR DEBIASING LANGUAGE MODELS

[Shaz Furniturewala](#), [Surgan Jandial](#), [Abhinav Java](#), [Pragyan Banerjee](#), [Simra Shahid](#), [Sumit Bhatia](#), [Kokil Jaidka](#)  
EMNLP (Main) '24 [7]

### ONE-SHOT DOC SNIPPET DETECTION: POWERING SEARCH IN DOCUMENTS BEYOND TEXT

[Abhinav Java](#), [Shripad Deshmukh](#), [Milan Agarwal](#), [Surgan Jandial](#), [Mausoom Sarkar](#), [Balaji Krishnamurthy](#)  
WACV '23 [8]

### LEARNING TO CENSOR BY NOISY SAMPLING

[Ayush Chopra](#), [Abhinav Java](#), [Abhishek Singh](#), [Vivek Sharma](#), [Ramesh Raskar](#)  
ECCV '22 [9]

## Patents

Personalized form error correction propagation, <a href="#">US Patent 12394236</a> .	2025/08/19
One Shot Doc Snippet Detection, <a href="#">US Patent 20250005048A1</a> .	2025/01/02
Form structure similarity detection, <a href="#">US Patent 12124497B1</a> .	2024/10/22
Systems and methods for data augmentation, <a href="#">US Patent 20240119122A1</a> .	2024/04/11

## Featured Projects and Collaborations

Efficient Multi-Hop Reasoning for Retrieval Augmented Generation w/ <a href="#">Amit Sharma</a> , <a href="#">Nagarajan Natarajan</a> , <a href="#">Srivathsan Koundinyan</a> > Led the development of a project to create efficiently adaptable and low-latency RAG system with SLMs. > Proposed FrugalRAG: by learning efficient use of test-time compute using reinforcement learning > Improved latency and data efficiency by approximately 2x.	08/2024 – Present <b>Microsoft Research</b>
Rethinking Taskonomy in the era of Large Vision Language Models w/ <a href="#">Vineeth N Balasubramanian</a> > Proposed a framework to study transferability of perception tasks in Vision-Language Models (VLMs). > Introduced a novel metric to quantify cross-task influence in VLM finetuning. > Revealed actionable insights – beneficial task cliques and transfer trends for effective finetuning strategies.	04/2025 - Present <b>Microsoft Research</b>
A Model Agnostic Approach to Create Unlearnable Text Datasets w/ <a href="#">Chirag Agarwal</a> > Developed the first model-agnostic, efficient unlearnable text data generation framework for user data privacy. > Proposed RegText: a mechanism to perturb sensitive datasets using information-theoretic insights. > Demonstrated that finetuning large models (e.g. GPT-4o) on our datasets drops performance below zero-shot!	03/2024 – 03/2025 <b>University of Virginia</b>
Protecting Private Information in 3D Point Clouds for Perception Tasks w/ <a href="#">Ayush Chopra</a> , <a href="#">Ramesh Raskar</a> > Designed an approach to simplify the release of sensitive point cloud data with privacy protection. > Implemented CBNS: an end-to-end differentiable sampler and a novel loss to protect point clouds from adversaries. > Demonstrated improved privacy-utility tradeoffs with CBNS on perception tasks on 3D face datasets.	03/2021 – 10/2022 <b>Camera Culture, MIT Media Lab</b>

## Leadership, Invited Talks, and Service

Fireside Chat, <a href="#">LiveDRBench</a> . Plutos Dev	Fall 2025
Career Talk, <a href="#">AI Summer School</a> . Delhi Technological University	Summer 2025
Oral Talk, <a href="#">Prompting for Debiasing LLMs</a> . AAAI	Winter 2024
Pre-placement Talk, <a href="#">Adobe Hiring</a> . Delhi Technological University	Summer 2024
Team <a href="#">UAS-DTU</a> , Vice Captain, Software & Airframes Technician. > Secured a funding of \$1M from Adani Group for building Drone Swarm for disaster relief. ( <a href="#">Media</a> ) > Awarded the best communication architecture prize of INR 250K in IAF National Competition. ( <a href="#">Media</a> )	2019 - 2020
<a href="#">Umeed Foundation</a> , Volunteer. > Provided career counseling to college students, and assisted with interview preparation. > Taught middle school students basic science and mathematics during covid. > Awarded for my volunteering efforts by Adobe as one of the top 50 contributors.	2022 - 2023
<b>Reviewer:</b> ICLR '26, CVPR '25, KDD '24, CVPR'24, U&ME@ECCV'24, WACV'23, ML4PS@NeurIPS'22, ECCV'22	

## Honors and Awards

NeurIPS Scholar Award, 2025	Awarded funding for travel to NeurIPS 2025 by the conference.
AAAI Oral Talk, 2024	Selected for an invited talk at AAAI 2024, Student Abstract Track.
Research Excellence Award, 2022	Awarded for undergraduate research during undergrad (1 in approx 2000).
Semester Merit Award, 2021	For securing University Rank 1 in the 5th Semester (1 in approx 2000).
Joint Entrance Exams, 2018	Secured 99.28 percentile in Main and 96.78 percentile in Advanced (in 1.2 million).
National Talent Search Exam, 2017	Qualified Stage 1 (Top 1% in 1.2 million).