ABHINAV JAVA

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EDUCATION

Delhi Technological University, New Delhi India
BE in Computer Science & Engineering (2022)   CGPA: 8.84

WORK EXPERIENCE

Adobe, Media and Data Science Research (MDSR)   July 2022 - Present
ML Engineer 2 (Senior Director: Balaji K)   *Noida, India*

· Developing cutting-edge capabilities for Multi-Modal Large Language Models, with a primary focus on advancing complex document understanding.
· Published research at the prestigious AAAI 2024 conference, shedding light on trustworthy language models. Specifically, contributed to decoding algorithms for fair Large Language Model (LLM) inference.

Adobe, Media and Data Science Research (MDSR)   July 2022 - July 2023
ML Research Associate (Senior Director: Balaji K)   *Noida, India*

· Pioneered a flexible distillation framework, incorporating feedback from the student model through a meta-learning pipeline to enhance fairness in knowledge distillation processes.
· Co-led the development of a state-of-the-art one-shot object detection framework, seamlessly integrating contextual information from diverse modalities. This innovation enables efficient searching of snippets within complex documents and forms, resulting in the issuance of two patents and a paper at WACV, 2023.

SELECTED PUBLICATIONS

1. Banerjee, Pragyan*, **Abhinav Java***, Surgan Jandial*, Simra Shahid*, Shaz Furniturewala, Balaji Krishnamurthy, and Sumit Bhatia. "All Should Be Equal in the Eyes of Language Models: Counterfactually Aware Fair Text Generation." (accepted at AAAI 2024)[PDF].

2. **Abhinav Java***, Surgan Jandial*, and Chirag Agarwal. "Towards Fair Knowledge Distillation using Student Feedback." Workshop on Efficient Systems for Foundation Models ICML (2023).[PDF]

3. **Abhinav Java***, Shripad Deshmukh*, Milan Aggarwal, Surgan Jandial, Mausoom Sarkar, and Balaji Krishnamurthy. "One-shot doc snippet detection: Powering search in document beyond text." Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (2023). [PDF]

4. Anil Singh Parihar*, and **Abhinav Java***. "Densely connected convolutional transformer for single image dehazing." Journal of Visual Communication and Image Representation (2023). [PDF]

5. Ayush Chopra, **Abhinav Java**, Abhishek Singh, Vivek Sharma, and Ramesh Raskar. "Learning to Censor by Noisy Sampling." European Conference on Computer Vision (2022). [PDF]

6. Surya Kant Sahu, **Abhinav Java**, Arshad Shaikh, and Yannic Kilcher. "Rethinking Neural Networks With Benford's Law." Neurips Workshop on ML4Physics (2021). [PDF]

7. Sai Mitheran, **Abhinav Java**, Surya Kant Sahu, and Arshad Shaikh. "Introducing Self-Attention to Target Attentive Graph Neural Networks." AISP (2022). [PDF]

8. Surgan Jandial, Shripad Deshmukh, **Abhinav Java**, Simra Shahid, and Balaji Krishnamurthy. "Gatha: Relational Loss for Enhancing Text-Based Style Transfer." Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, CVFAD Workshop (2023). [PDF]

PATENTS

Our work resulted in **4 Patents** filed in the US Patent office, with three more in preparation over the last 1.5 years at Adobe. List of patent ids: *P12004-US, P11686-US, P11882-US, P11364-US.*

INTERNSHIPS & COLLABORATIONS

Massachusetts Institute of Technology March 2021 - October 2022
Collaborator, Media Lab (Mentor: Ayush Chopra) *Remote*

· Designed mechanisms for private sampling of structured data. CBNS focuses on 3D point clouds, preventing the leakage of private information for perception tasks, our work was presented at ECCV 2022.

Adobe, Media and Data Science Research (MDSR) May 2021 - May 2022
Research Intern (Host: Balaji K) *Hybrid*

· Worked with the forms team to develop solutions for automating the review and correct tool in the form segmentation and structure extraction pipeline.
· Developed a novel solution for one-shot identification of form snippets, resulting in multiple patents and a paper.

Indian Institute of Technology, Bombay Sept. 2020 - Feb. 2021
Research Intern (Host: Prof. Ganesh Ramakrishnan) *Remote*

· Implemented a text image restoration-based strategy for robust optical character recognition (github)

IDfy May 2020 - July 2020
Intern, ML Team (Host: Gurudatt Bhobe) *Remote*

· Developed an offline signature verification microservice for document validation.
· Initiated the integration of static and security checks in CI/CD pipelines using Bandit and PyLint. Did extensive testing using JMeter and Insomnia to ensure the robustness of existing Python Apps.

POSITIONS OF RESPONSIBILITY/SERVICE/TALKS

Reviewer: Neurips (ML4Physics), WACV, CVPR, KDD 2022-Present

Served as a reviewer for top-tier ML, and computer vision conferences and workshops.

Pre-Placement Talk, DTU 2023

Represented Adobe at the training and placement department, of Delhi Technological University.

University Tech Team, UAS-DTU Sept. 2019 - Oct. 2020
Vice Captain (2020)

Worked with a team of 20 undergraduates towards developing a swarm of 50 UAVs with capabilities of extreme weather tolerance, 50km range, human detection, payload drop, etc for aid in Humanitarian Assistance and Disaster Relief situations. (website)

AWARDS & HONOURS

- Research Award (Delhi Technological University) for excellence in undergraduate research (2022).

- Partnered with Adani Defense and Aerospace, UAS-DTU was one of the top 3 and only undergraduate teams in IAF-Mehar Baba Prize, Phase 3. The prize for engineering a robust aerial swarm in the previous phase was INR 25 lakh. In the final phase, the team won the prize for best communication architecture (2020).

- Qualified for the National Talent Search Examination (NTSE) stage 2 (2017).

- Participated in the JENESYS Youth Football Exchange program to Japan as a sports-cultural representative from India (2015).

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* Denotes Equal contribution