

Arnesh Batra

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Delhi, India

EXPERIENCE

- **SBI Lab, IIITD** May 2025 - Present
Research Intern Delhi, IN
 - Working on medical imaging of different modalities, focusing on 2D and 3D data under the supervision of Professor Anubha Gupta.
- **Meta / Brown University** May 2025 - Present
Research Collaborator Remote
 - Working on theoretical methods for self-supervised learning under the supervision of Professor Randall Balestriero.
- **The University of California, San Diego** Feb 2025 - May 2025
Research Intern Remote
 - Working under Professor Pengtao Xie for developing large language models for DNA RNA interaction prediction.
 - Developing transformer based models for processing DNA/RNA sequences of 100,000 + length using multi-GPU batch handling.
- **AI Institute, University of South Carolina** Oct 2024 - May 2025
Research Intern Remote
 - Developed robust watermarking techniques for AI-generated video content under the supervision of Professor Amitava Das.
 - Experimented with advanced Video-to-Video and Text-to-Video models to explore resilient watermarking applications, working with metrics like SSIM and FVD score.
 - Skills: Deep Learning, Computer Vision
- **HMI Lab, IIITD** May 2024 - Oct 2024
Research Intern Delhi, IN
 - Worked on a project under Professor Jainendra Shukla, implementing multimodal LLMs for real-time tasks like live commentary generation and video captioning.
 - Work accepted in IEEE Transactions on Multimedia.
 - Skills: Deep Learning, Computer Vision, Natural Language Processing
- **CYBORG** Dec 2023 - Present
AI/ML Lead Delhi, IN
 - Organized and delivered a workshop on Neural Networks, enabling over 40+ students build their first neural networks from scratch.
 - Skills: Deep Learning, Machine Learning

EDUCATION

- **Indraprastha Institute of Information Technology, Delhi** Aug 2023 - May 2027
Bachelor's degree, Computer Science and Artificial Intelligence Delhi, India
 - GPA: 8.8/10.0
 - **Relevant Coursework:** Data Structures and Algorithms, Introduction to Intelligent Systems, Linear Algebra

PROJECTS

- **FOCUS FLOW: Adaptive Learning Platform**

Tools: PyTorch, Deep Learning, LLM, Mediapipe, OpenCV

◦ Developed an AI-driven platform that customizes educational content for neurodiverse students.

◦ Implemented real-time attention tracking using Mediapipe and OpenCV to enhance learning outcomes.

Ongoing


- **SuperResolution for Gravitational Lensing Images**

Tools: PyTorch, Deep Learning, GANs, SRResNet, Diffusion Models

◦ Implemented and evaluated various models including GANs, SRResnet, and diffusion-based denoising.

◦ Achieved a top AUROC Score of 0.9978 with 98.3

Ongoing


- **RE-DACT - Secure Data Redaction Tool**

Tools: PyTorch, Deep Learning, NLP, Computer Vision, Transformers

◦ Selected for Smart India Hackathon (SIH) 2024 grand finals.

◦ Tool redacts text, PDF, images, and videos with over 99

Ongoing

PUBLICATIONS

C=CONFERENCE, W=WORKSHOP, S=IN SUBMISSION

- [C.1]

Batra, A., et al. (2024). **Audio Spectrogram Transformer Guided Classification and Information Retrieval For Birds**. In *Proceedings of INTERSPEECH 2024*. (First Author)
- [C.2]

Batra, A., et al. (2025). **M-SCAN: A Multistage Framework for Lumbar Spinal Canal Stenosis Grading Using Multi-View Cross Attention**. In *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Demonstrations Track*. (First Author)
- [W.1]

Batra, A., et al. (2025). **SocialDF: Benchmark Dataset and Detection Model for Mitigating Harmful Deepfake Content on Social Media Platforms**. In *Proceedings of the ACM International Conference on Multimedia Retrieval (ICMR) Workshops (MAD)*. (First Author)
- [S.1]

Batra, A., et al. (2025). **Melody or Machine: Benchmarking and Detecting Synthetic Music via Cross-Modal Contrastive Alignment**. Manuscript under review for *NeurIPS 2025*. (First Author)

SKILLS

- **Programming Languages:** Python, C++, Java, JavaScript, SQL, HTML, CSS, Flutter
- **Data Science & Machine Learning:** Deep Learning, NLP, Computer Vision, PyTorch, TensorFlow, Hugging Face, LangChain, Scikit-learn, Pandas, NumPy
- **DevOps & Version Control:** Git, Linux, Docker
- **Cloud Technologies:** Cloud Computing Concepts


HONORS AND AWARDS

- **Smart India Hackathon (SIH) 2024 Grand Finalist**


Project "RE-DACT" selected for finals at IIT Kharagpur

2024
- **1st Place, F1nalyze - Formula 1 Datathon**

Kaggle Competition


- **4th Place, Machine Learning Hackathon**

IIT Jodhpur


- **5th Place, "FILL THE VOID()" Hackathon**

IIT Jammu

LEADERSHIP EXPERIENCE

- **StarkVision**

Founder & Lead Researcher

May 2025 - Present

Remote

◦ Founded and lead a research community of over 20 members, fostering independent research projects in AI/ML.

◦ Currently leading 3 active projects, previous projects resulted in a CVPR 2025 demo acceptance and an ICMR 2025 workshop acceptance with a paper currently at review in Neurips 25.

◦ Actively mentor members on project development, research methodologies, and publication strategies.
- **AI/ML Lead**

Cyborg, IIITD

Dec 2023 - Present

Delhi, IN

◦ Organized and delivered a hands-on workshop on Neural Networks to 40+ students.

◦ Guided students in building their first neural networks from scratch.