

# Anand Mishra, PhD

CSE-210

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## Employment

- **Indian Institute of Technology** Jodhpur, India  
*Assistant Professor* July 2019 - Present
- **Indian Institute of Science** Bangalore, India  
**Position:** Research Associate (postdoctoral fellow)  
**Host:** Dr. Partha Pratim Talukdar  
**Research focus:** Knowledge-aware Computer Vision  
August 2017 - July 2019
- **International Institute of Information Technology** Hyderabad, India  
**Position:** Research Associate (postdoctoral fellow)  
**Host:** Prof. C. V. Jawahar  
**Research focus:** Intelligent Image Matching  
January 2017 - July 2017

## Education

- **International Institute of Information Technology** Hyderabad, India  
*PhD, Computer Science and Engineering (CGPA: 8.6)* August 2009 - November 2016
  - **Thesis:** Understanding Text in Scene Images
  - **Advisers:** Prof. C. V. Jawahar (IIIT-H) and Dr. Karteek Alahari (Inria, France)
- **Birla Institute of Technology Mesra** Ranchi, India  
*M.Tech., Computer Science (CGPA: 8.2)* 2006-2008
  - **Thesis:** Image Compression using Weighted Finite Automata
  - **Adviser:** Prof. G. Sahoo
  - **Fellowship:** MHRD GATE Fellowship
- **Guru Ghasidas University (now a central univ.)** Bilaspur, India  
*M.Sc., Computer Science (Percentage: 68.8)* 2004-2006
- **Guru Ghasidas University (now a central univ.)** Bilaspur, India  
*B.Sc., with Mathematics (Percentage: 72.3)* 2001-2004
- **Govt. Boys School (MPBSE)** Jashpur Nagar, India  
*12th. with Physics, Chemistry, Mathematics (Percentage: 76.7)* 2001
- **Govt. Model School (MPBSE)** Jashpur Nagar, India  
*10th. (Percentage: 79.0)* 1999

## Awards/Fellowships/Recognitions

- Google Research Gemma Academic Program Award of Cloud Credits worth USD 10,000 (2025)
- Google Cloud Teaching Credit Award to support my course CSL2070, at IIT Jodhpur (2024)
- One of the Outstanding Reviewers at CVPR (2023)
- One of the Outstanding Reviewers at ICCV (2021)
- IIT Jodhpur Teaching Excellence Award (2020)
- Google Gift to support travel for AAAI (Honolulu) (2019 )
- First runner-up for the doctoral dissertation award at XRCI Open (2015)
- ACM-India Travel Grant to attend ACM-IRISS (Goa) (2015)
- IEEE Student Travel Grant to attend ICCV (Sydney) (2013)
- Microsoft Research India PhD fellowship Award (One among only four PhD students in the country in the year 2012) (2012)
- Google India Travel Grant to attend CVPR (Providence) (2012)
- Microsoft Research India Travel Grant to attend ICDAR (Beijing) (2011)
- GATE Scholarship (2006 – 2008)

## Selected Awards/Fellowships/Recognitions by Students

- **Shreya Shukla and Nakul Sharma:** Won IIT Jodhpur Director's Prize for best BTP among graduating batch of 2024.
- **Vaibhav Mishra and Mayank Maheshwari:** Won IIT Jodhpur Director's Prize for best BTP among graduating batch of 2021.
- **Yogesh Kumar:** Selected for presenting papers in Vision India 2023 and 2024. (This special session at ICVGIP features top-tier publications in computer vision authored by researchers affiliated with Indian institutions).
- **Yogesh Kumar, Shreya Shukla, and Abhirama P.:** Invited to attend Google Research week
- **Abhirama P.:** Selected for Prime Minister's Research Fellowship 2021
- **Yogesh Kumar:** Recognised as one of the outstanding reviewers at BMVC 2024.
- **Abhirama P.:** Won Microsoft Research Travel Grant to attend IJCAI 2023 (Macao).
- **Shreya Shukla:** Won ACM-Woman Travel Grant to attend ICDAR 2023 (San Jose).

## Grants

- **Principle Investigator:** Digitising Manuscripts at the Indira Gandhi National Centre for the Arts and Facilitating Online Access to Digitised Documents.  
**Funding Agency:** TIH-iHub Drishti  
**Duration:** 2024-2025  
**Grant Amount:** INR 40,00,000
- **Principal Investigator:** OCR and Application in Indian Languages.  
**Funding Agency:** MeITy, Govt of India (Under NLTm Bhashini)  
**Duration:** 2022-2026  
**Grant Amount:** INR 1,83,90,000
- **Principle Investigator:** Self-Supervised Learning for Open-set Very-Large-Scale Video Retrieval.  
**Funding Agency:** Microsoft R&D (Under MAPG 2023)  
**Duration:** 2023-2025  
**Grant Amount:** INR 15,00,000
- **Principle Investigator:** Table Detection and Layout Analysis on Clinical Documents.  
**Funding Agency:** HealthcareNLP  
**Duration:** 2023-2024  
**Grant Amount:** INR 13,19,914
- **Principal Investigator:** Analogy Based Visual Relationship Interpretation from Cross-Task Videos and Standard Operating Procedures.  
**Funding Agency:** Accenture LLC (Gift Grant)  
**Duration:** 2022-2024  
**Grant Amount:** USD 20,000 (INR 16,32,791)
- **Principal Investigator:** Multimodal Query-guided Natural Scene Retrieval.  
**Funding Agency:** SERB, Govt of India (Under Start-up Research Grant)  
**Duration:** 2021-2023  
**Grant Amount:** INR 29,64,110
- **Principal Investigator:** Seed Grant.  
**Funding Agency:** IIT Jodhpur  
**Duration:** 2022-2023  
**Grant Amount:** INR 16,00,000
- **Principle Investigator:** Inference and Reasoning over Web-Scale Multimodal Knowledge Graph.  
**Funding Agency:** Microsoft R&D (Under MAPG 2021)  
**Duration:** 2021-2022  
**Grant Amount:** INR 14,16,000
- **Principal Investigator:** Knowledge Discovery from Images Containing Text and its Application to Audio-Visual Dialogue.  
**Funding Agency:** Accenture LLC  
**Duration:** 2020-2021  
**Grant Amount:** USD 20,000 (INR 14,64,633)

## Publications

### Note

In the fields of Computer Vision, Natural Language Processing, and Artificial Intelligence, leading conferences such as CVPR, ICCV, ECCV, EMNLP, and AAAI are considered on par with, or even more competitive than, many journals. With rigorous peer review, high visibility, and fast dissemination, these venues typically have acceptance rates below 25%, and oral presentation acceptance below 5%. Conference proceedings in these fields often set the research agenda and are highly cited, sometimes even more than journals.

All these publication venues are listed as **A\*** in the CORE (Computing Research and Education) ranking. They are also highly ranked in other academic evaluation systems such as CSRankings (which uses faculty publication data), Google Scholar Metrics (based on h5-index), and Scimago Journal Rank (SJR). These metrics highlight the real-world research impact, academic rigor, and visibility of these publication venues across both academic and industry communities.

**As of April 27, 2025, my publications have garnered 2722 citations, with an *h*-index of 14 and an *i10*-index of 15 (Source: Google Scholar).**

### Top-Tier Conferences (CVPR,ICCV,ECCV,AAAI,IJCAI, EMNLP, etc.)

1. Shreya Shukla\*, Nakul Sharma\*, Manish Gupta, **Anand Mishra**, *PatentLMM: Large Multimodal Model for Generating Descriptions for Patent Figures*, Association for the Advancement of Artificial Intelligence (**AAAI**) 2025 (\*: Equal contribution).
2. Abhirama Subramanyam Penamakuri, **Anand Mishra**, *Visual Text Matters: Improving Text-KVQA with Visual Text Entity Knowledge-aware Large Multimodal Assistant*, Empirical Methods in Natural Language Processing (**EMNLP**) 2024.
3. Yogesh Kumar, Saswat Mallick, **Anand Mishra**, Sowmya Rasipuram, Anutosh Maitra, Roshni Ramnani, *QDETRv: Query-Guided DETR for One-Shot Object Localization in Videos*, Association for the Advancement of Artificial Intelligence (**AAAI**) 2024
4. Prajwal Gatti, Kshitij Parikh, Dhriti Paul, Manish Gupta, **Anand Mishra**, *Composite Sketch+Text Queries for Retrieving Objects with Elusive Names and Complex Interactions*, Association for the Advancement of Artificial Intelligence (**AAAI**) 2024
5. Abhirama Subramanyam Penamakuri, Manish Gupta, Mithun Das Gupta, **Anand Mishra**, *Answer Mining from a Pool of Images: Towards Retrieval-Based Visual Question Answering*, International Joint Conference on Artificial Intelligence (**IJCAI**) 2023.
6. Yogesh Kumar, **Anand Mishra**, *Few-Shot Referring Relationships in Videos*, IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**) 2023.
7. Prajwal Gatti, **Anand Mishra**, Manish Gupta, Mithun Das Gupta, *VISTOT: Vision-Augmented Table-to-Text Generation*, Empirical Methods in Natural Language Processing (**EMNLP**) 2022.
8. Revant Teotia\*, Vaibhav Mishra\*, Mayank Maheshwari\*, **Anand Mishra**, *Few-shot Visual Relationship Co-localization*, IEEE International Conference on Computer Vision (**ICCV**) 2021. (\*: equal contribution).
9. Aditay Tripathi, Rajath Dani, **Anand Mishra**, Anirban Chakraborty, *Sketch-guided Object Localization in Natural Images*, European Conference on Computer Vision (**ECCV**) 2020 (spotlight).

10. Ajeet Kumar Singh, **Anand Mishra**, Shashank Shekhar, Anirban Chakraborty, *From String to Things: Knowledge-enabled VQA Model that can read and reason*, IEEE International Conference on Computer Vision (**ICCV**) 2019 (oral).
11. Sanket Shah\*, **Anand Mishra\***, Naganand Y., Partha Pratim Talukdar, *KVQA: Knowledge-aware Visual Question Answering*, Association for the Advancement of Artificial Intelligence (**AAAI**) 2019. (\*: equal contribution).
12. **Anand Mishra**, Karteek Alahari, C. V. Jawahar, *Image Retrieval using Textual cues*, IEEE International Conference on Computer Vision (**ICCV**) 2013.
13. **Anand Mishra**, Karteek Alahari, C. V. Jawahar, *Top-down and Bottom-up cues for Scene Text Recognition*, IEEE Conference on Computer Vision and Pattern Recognition (**CVPR**) 2012.

#### **Other Notable Conferences and High-Impact Journals (ICDAR, WACV, BMVC, CVIU, etc.)**

14. (**Journal**) Neelu Verma, Anik De, **Anand Mishra**, *Bridging Language to Visuals: Towards Natural Language Query-to-Chart Image Retrieval*, International Journal of Multimedia Retrieval, Volume 13(3), Article Number 32, 2024
15. (**Journal**) Aditay Tripathi, Rajath R. Dani, **Anand Mishra**, Anirban Chakraborty, *Multimodal Query-guided Object Localization*, Multimedia Tools and Applications, Volume 83(5), pages 14857–14881, 2024
16. Shreyas Vaidya\*, Arvind Kumar Sharma\*, Prajwal Gatti, **Anand Mishra**, Show me the world in my language: Establishing the first baseline for scene-text to scene-text translation, International Conference on Pattern Recognition (**ICPR**) 2024 (\*: Equal contribution).
17. Shreya Shukla, Prajwal Gatti, Yogesh Kumar, Vikash Yadav, **Anand Mishra**, *Towards Making Flowchart Images Machine Interpretable*, International Conference on Document Analysis and Recognition (**ICDAR**) 2023.
18. Aditay Tripathi, **Anand Mishra**, Anirban Chakraborty, *Query-guided Attention in Vision Transformers for Localizing Objects Using a Single Sketch*, Winter Conference on Applications of Computer Vision (**WACV**) 2024.
19. K.V. Jobin, **Anand Mishra**, C. V. Jawahar, *Semantic Labels-Aware Transformer Model for Searching over a Large Collection of Lecture-Slides*, Winter Conference on Applications of Computer Vision (**WACV**) 2024 (Oral) (Best paper finalist).
20. Aditay Tripathi, **Anand Mishra**, Anirban Chakraborty, *Grounding Scene Graphs on Natural Images via Visio-Lingual Message Passing*, Winter Conference on Applications of Computer Vision (**WACV**) 2023.
21. **Anand Mishra**, Ajeet Kumar Singh, Shashank Shekhar\*, Anirban Chakraborty, *OCR-VQA: Visual Question Answering by Reading Text in Images*, International Conference on Document Analysis and Recognition (**ICDAR**) 2019.
22. (**Journal**) **Anand Mishra**, *DHFML: Deep Heterogeneous Feature Metric Learning for Matching Photo-Cartoon Pairs*, International Journal of Multimedia Retrieval, pages 1–8, 2018,
23. (**Journal**) **Anand Mishra**, Karteek Alahari, C. V. Jawahar, *Unsupervised refinement of color and stroke features for text binarization*, International Journal on Document Analysis and Recognition, Volume 20(2), pages 105–121, 2017

24. **(Journal) Anand Mishra**, Karteek Alahari, C. V. Jawahar, *Enhancing Energy Minimization Framework for Scene Text Recognition with Top-Down Cues*, Computer Vision and Image Understanding, volume 145, pages 30–42, 2016
25. Vibhor Goel, **Anand Mishra**, Karteek Alahari, C. V. Jawahar, *Whole is Greater than Sum of Parts: Recognizing Scene Text Words*, International Conference on Document Analysis and Recognition (**ICDAR**) 2013.
26. Vijay Kumar, Amit Bansal, Gautom Hari Tulsiyan, **Anand Mishra**, Anoop Namboodari, C. V. Jawahar, *Sparse Document Image Coding for Restoration*, International Conference on Document Analysis and Recognition (**ICDAR**) 2013.
27. **Anand Mishra**, Karteek Alahari, C. V. Jawahar, *Scene Text Recognition using Higher Order Language Priors*, British Machine Vision Conference (**BMVC**) 2012 (Oral).
28. **Anand Mishra**, Karteek Alahari, C. V. Jawahar, *An MRF Model for Binarization of Natural Scene Texts*, International Conference on Document Analysis and Recognition (**ICDAR**) 2011 (Oral).

### **Regional Conferences, Other Journals, and Workshops**

29. Nakul Sharma, Aditay Tripathi, Anirban Chakraborty, **Anand Mishra**, *Sketch-guided Image Inpainting with Partial Discrete Diffusion Process*, **CVPR Workshop** 2024.
30. U. Agarwal, Y. Kumar, A. Shahid, Prajwal Gatti, Manish Gupta, **Anand Mishra**, *ChapVidMR: Chapter-Based Video Moment Retrieval using Natural Language Queries*, Indian Conference on Computer Vision, Graphics and Image Processing (**ICVGIP**) 2024.
31. Prajwal Gatti, Abhirama Subramanyam Penamakuri, Revant Teotia, **Anand Mishra**, Shubhashis Sengupta, Roshni Ramnani, *COFAR: Commonsense and Factual Reasoning in Image Search*, Asia-Pacific Chapter of the Association for Computational Linguistics and the International Joint Conference on Natural Language Processing (**AACL-IJCNLP**) 2022.
32. Nakul Sharma, Abhirama Subramanyam Penamakuri, **Anand Mishra**, *Contrastive Multi-View Textual-Visual Encoding: Towards One Hundred Thousand-Scale One-Shot Logo Identification*, Indian Conference on Computer Vision, Graphics and Image Processing (**ICVGIP**) 2022.
33. **Anand Mishra** and Ajeet K. Singh, *Deep Embedding using Bayesian Risk Minimization with Application to Sketch Recognition*, Asian Conference on Computer Vision (**ACCV**) 2018.
34. Udit Roy, **Anand Mishra**, Karteek Alahari, C. V. Jawahar, *Scene Text Recognition and Retrieval for Large Lexicons*, Asian Conference on Computer Vision (**ACCV**) 2014.
35. Ashutosh Mishra, Shyam N. Rai, **Anand Mishra**, C. V. Jawahar, *IIIT-CFW: A benchmark database for Cartoon Faces in the Wild*, **ECCV Workshop** 2016 (oral).
36. Ajeet K. Singh, **Anand Mishra**, Pranav Dabral, C. V. Jawahar, *A Simple and Effective Solution for Script Identification in the Wild*, Workshop on Document Analysis System (**Document Analysis Systems Workshop**) 2016.
37. Swetha Sirnam, **Anand Mishra**, G. M. Hegde, C. V. Jawahar, *Efficient Object Annotation for Surveillance and Automotive Applications*, **WACV Workshop** 2016.
38. **Anand Mishra**, Naveen T.S., Viresh Ranjan, C. V. Jawahar, *Automatic Localization and Correction of Line Segmentation Errors*, Workshop on Document Analysis Recognition (**Document Analysis and Recognition Workshop**) 2012. (Oral).

39. Deepan Gupta\*, Vaidehi Chhajjer\*, **Anand Mishra**, C. V. Jawahar, *A Non-local MRF model for Heritage Architectural Image Completion*, Indian Conference on Computer Vision, Graphics and Image Processing (**ICVGIP 2012**) (\*: equal contribution).
40. Dheeraj Mundhra, **Anand Mishra**, C. V. Jawahar, *Automatic Localization of Page Segmentation Errors*, **J-MOCR-AND Workshop** 2011 (Oral).

## Technology Transfer and Research Impact

### Note

My research outputs, including datasets and open-source toolkits, have been widely adopted by academia and industry, significantly influencing the fields of OCR, Visual Question Answering, and Multilingual Document Understanding.

- **IndicPhotoOCR Toolkit (2025)**: Open-source OCR system for natural scene images in 10 Indian languages and English, released under the NLTm Bhashini initiative. Designed for practical use by developers and startups.
- **OCR-VQA Dataset (2019)**: Pioneering benchmark at the intersection of document understanding and visual question answering. Facilitated the development of text-centric multimodal models.
- **IIIT-5K Dataset (2012)**: Public benchmark for scene text recognition, widely adopted by the computer vision community. Used in over 500 research publications and commercial OCR system evaluations.

## Selected Invited Talks

- ACM-India ROCS 2024, LNMIIT Jaipur (August 2024)
- Distinguished Researcher Speaker Series (DRSS), Accenture Labs (virtual) (October 2023)
- CS Katha Barta, NISER, Bhubaneswar (virtual) (September 2023)
- ICDAR 2023 Tutorial on Document Intelligence, San Jose, USA (August 2023)
- ACM-India ARCS 2023, Bhopal (Feb. 2023)
- Search Technology Centre India (STCI), Microsoft (virtual) (March 2022)
- WADLA, IIIT Sri City (virtual) (Feb. 2022)
- ICMI Pre-Conference Workshop 2022, IIIT Bangalore, (virtual) (Feb. 2022)
- Vision India, ICVGIP 2020, IIT Jodhpur (virtual) (December 2020)
- SPCOM 2020, IISc Bangalore (virtual) (July 2020)
- Department of Computer Science and Engineering, IIT Guwahati (June 2019)
- IIIT Bangalore (March 2019)
- BLIPAR, Bengaluru (May 2017)

- Visual Learning and Intelligence lab, Department of CSE, IIT-Hyderabad, India (September 2015)
- ACM-IRISS 2015, Goa, India (February 2015)
- XRCI Open 2015, Bengaluru, India (January 2015)
- Amazon-ML group, Bengaluru, India (December 2014)
- Mysore Workshop on Machine Learning - 2012

## Students

### PhD:

1. Abhirama P. (2019 - Present)
2. Neelu Verma (MTech-PhD) (2019-Present)
3. Yogesh Kumar (MTech-PhD) (2020-Present)
4. Gyan Prabhat (2021-Present)

### MTech (Only full-time):

1. Mohit Sharma (2024-Present)
2. Ritu Singh (2024-Present)
3. Apoorv Shekhar (2023-2024)
4. Dhriti P. Paul (2022-2023)
5. Deepti Gupta (2022-2023)
6. Gaurav Pilankar (2021-2022)
7. Rahul Kumar Chaudhary (2021-2022)  
- Jointly with Dr. G. Bhatnagar
8. Stuti Pathak (2021-2022)
9. Rati Kumari (2021-2022)
10. Ambikesh Kumar Singh (2021-2022)
11. Pratik Somwanshi (2020-2021)  
- Jointly with Dr. G. Bhatnagar
12. Megha Kumari (2020-2021)
13. Kena Hemmani (2020-2021)  
- Jointly with Dr. Suril Shah

### Undergraduate:

1. Arvind Kumar Sharma (2024-Present)
2. Shreyas Vaidya (2024-Present)



3. Shreya Shukla (2021 - 2024)
4. Nakul Sharma (2021 - 2024)
5. Abu Shahid (2021 - 2024)
6. Ayush Anand (2023-2024)
7. Suyash Maniyar (2022-2023)
8. Vaibhav Mishra (2020-2022)
9. Mayank Maheswari (2020-2022)

**Research Assistant/Long-tenure Intern:  
IIT Jodhpur:**

1. Lokesh K. (2024-Present)
2. Uday Agarwal (2024-Present)
3. Anik De (2023-Present)
4. Prajwal Gatti (2021-2023)
5. Revant Teotia (2020-2021)

**At IISc Bangalore:**

1. Rajath D. Dani (2020-2022, co-advisor: Dr. Anirban)
2. Shashank Shekhar (2018-2019, co-advisor: Dr. Anirban)
3. Anjali Shenoy (2018-2019, co-advisor: Ayush Bansal)

**At IIIT Sri City:**

1. Ashutosh Sharma (2015-2016, co-advisor: Prof. Jawahar)
2. Shyam N Rai (2015-2016, co-advisor: Prof. Jawahar)

**At IIIT Hyderabad:**

1. Vibhor Goel (2013-2014, co-advisor: Prof. Jawahar)
2. Pranab Dabral (2013-2014, co-advisor: Prof. Jawahar)
3. Dheeraj Mundhara (2011-2011, co-advisor: Prof. Jawahar)

<b>Teaching Experience: Recently Taught Courses</b>
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- CSL2050: Pattern Recognition and Machine Learning (Spring'24/25)
- CSL7670: Fundamentals of Machine Learning (Monsoon'23)
- CSL7620: Machine Learning (Fractal-3) (Spring'20/21/22/23)
- CSL7360: Computer Vision (Spring'23)

- CSL2040: Maths for Computing (AY 20-21–Tri-3/Monsoon’21/22)
- CSL7410: Graph Theory and Application (AY 20-21–Tri-1, Spring’22)
- CS222: Theory of Computation (Spring’20)
- CS212: Object-oriented Design and Analysis (Monsoon’19)
- UE101: Algorithms and Programming (Monsoon’18)
  - Co-taught at the Indian Institute of Science with Dr. Sathish Govindrajan and Dr. Viraj Kumar.

## Professional Service

### International Community

- **Reviewer:** ICLR 2023, ECCV 2020/2022/2024, CVPR 2020, 2022–2025, AAAI 2020–2022, ICCV 2019/2021/2023, IJCAI 2019/2020, ICDAR 2019, IEEE TPAMI, IJCV, IEEE TKDD, CVIU, IJ-DAR, Pattern Recognition.
- **Workshop co-organiser:** ScalDoc (ICDAR 2023), KBMM (AKBC 2019/2020), WDAR (ICVGIP 2020/2023).
- **Workshop Co-Chair:** ICFHR 2022.
- **PhD Thesis Examiner:** Jury President for Andres Mafla (UAB, Spain).

### National Community

- **Program co-chair:** ICVGIP 2025.
- **Steering committee member:** ICVGIP 2024.
- **Co-convenor with Dr. R. Nagar:** NCVPRIPG 2023 (hosted at IIT Jodhpur with 150+ participants).
- **Challenge co-organiser:** Summer Challenge on Writer Verification (NCVPRIPG 2023), AutoEval (NCVPRIPG 2024).

### At IIT Jodhpur

- **Co-program director:** Online BSc/BS in Applied AI & DS (Jan 2025 batch, 2025–Present).
- **IITJ Career Development Cell Member** (2022–present)
- **Co-organizer with Dr. P. Mazumdar and Dr. P. Jain:** Winter School on GenAI 2024 (100+ participants).
- **Program coordinator:** Executive MTech in AI (2019 batch, 2020–Present).
- **DRC convenor:** Department of CSE (2022–2024).
- **DRC member:** Department of CSE (2019–2024).

## References

Available on request.

*Updated on: April 30, 2025*