DR. ANJALI GAUTAM

My Google Scholar *h*-index: 10 (`https://scholar.google.co.in/citations?user=1xFIJOkAAAAJ&hl=en`)
My Research Gate Profile (`https://www.researchgate.net/profile/Anjali_Gautam5`)

Assistant Professor Grade-II, IT Department, Room No. 5045, CC-III, Indian Institute of Information Technology Allahabad, Deoghat, Jhalwa, Prayagraj, Uttar Pradesh, Pin-211015 , Phone: +91 7599380668, email: anjaligautam@iiita.ac.in.

EDUCATION

Ph.D (Computer Science & Engineering under Prof. Balasubramanian Raman)
Indian Institute of Technology Roorkee, Uttarakhand, India   *June 2019*

M. Tech (Computer Science & Engineering under Dr. Harvendra Singh Bhadauria
and Dr. Annapurna Singh)
79.83%
G.B. Pant Engineering College, Pauri Garhwal, Uttarakhand, India   *July 2014*

B. Tech (Computer Science & Engineering)
79.67%
Graphic Era University, Dehradun, Uttarakhand, India   *July 2012*

WORK EXPERIENCE

- **Assistant Professor**, Department of IT, Indian Institute of Information Technology Allahabad, INDIA (17 November 2020 - ongoing).

- **Assistant Professor**, Department of Computer Science and Engineering, Women Institute of Technology (State Government Institute, Affiliated to Uttarakhand Technical University), Dehradun, Uttarakhand, 248007, INDIA (22 June 2020 - 13 November 2020).

- **Assistant Professor** Department of Informatics, School of Computing, University of Petroleum and Energy Studies (UPES), Dehradun, Uttarakhand, Uttarakhand 248007, INDIA (20 Jan 20-19 June 2020)

- **Assistant Professor**, Department of Computer Science and Engineering, DIT University, Dehradun, Uttarakhand, 248009, INDIA (12 June 2019-13 Jan 2020)

SPONSORED PROJECTS

- **Title:** *Developing deep learning-based methodologies to identify breast cancer*, Sponsoring Agency: Seed Money, IIIT Allahabad, Amount: Rs. 10,00,000, Start date: 1 Dec 2022, End date: 1 Dec 2025.

- **Title:** *Design and Development of Computer-Aided Diagnostic Software to Localize and Grade Eye Diseases using Deep Learning and Transformer Approaches*, Sponsoring Agency: Science and Engineering Research Board (SERB), Amount: Rs. 23,04,544, Start date: 17 Feb 2023, End date: 16 Feb 2026.

MAJOR AWARDS, FELLOWSHIPS AND ACHIEVEMENTS

- ***Young Scientist Award*** in the field of Mathematics, Statistics & Computer Science by 12th Uttarakhand State Science and & Technology Congress 2017-18 for presenting my research work.

- CSIR travel award (100% of Airfare) to present my research work in *IEEE TENCON* 2016, November 22-25, 2016, SINGAPORE.

- MHRD-GATE Fellowship in Ph.D (2015-2019).

- MHRD-GATE Fellowship in M.Tech (2012-2014).

- Qualified UGC NET (with JRF) in 2014, CBSE-NET in 2015 and NTA NET in 2019.

EXPERTISE

Image Processing, Medical Image Analysis, Machine Learning, Deep Learning, etc.

PUBLICATIONS SUMMARY

Category	Published/ Accepted	Under Submission/ Revision
Refereed Journal Papers	9	3
Conference Papers	18	0

LIST OF REPRESENTATIVE PUBLICATIONS

A. Refereed International Journal Papers:

1. Suvramalya Basak, and **Anjali Gautam**. Diffusion-based normality pre-training for weakly supervised video anomaly detection. *Expert Systems with Applications*, **Vol. 251** , pp. 124013, 2024.

2. **Anjali Gautam**, Divyesh Rana, Saksham Aggarwal, Swaraj Bhosle, and Hritik Sharma, Deep learning approach to automatically recognise license number plates. *Multimedia Tools and Applications*, **Vol. 82**, No. 20, pp. 31487-31504, 2023.

3. **Anjali Gautam**, Recent advancements of deep learning in detecting breast cancer: a survey, *Multimedia Systems*, **Vol. 29**, No. 3, pp. 917-943, 2022.

4. **Anjali Gautam** and Balasubramanian Raman, Brain strokes classification by extracting quantum information from CT scans, *Multimedia Tools and Applications*, **Vol. 82**, pp. 15927-15943, 2021.

5. **Anjali Gautam** and Balasubramanian Raman, Towards accurate classification of skin cancer from dermatology images, *IET Image Processing*, **Vol. 15**, No. 9, pp. 1971-1986, 2021.

6. **Anjali Gautam** and Balasubramanian Raman, Towards Effective Classification of Brain Hemorrhagic and Ischemic Stroke using CNN, *Biomedical Signal Processing and Control*, **Vol. 63**, pp. 102178, 2020.

7. **Anjali Gautam** and Balasubramanian Raman, Local Gradient of Gradient Pattern: A Robust Image Descriptor for the Classification of Brain Strokes from Computed Tomography Images, *Pattern Analysis and Applications*, **Vol. 23**, pp. 797-817, 2019.

8. **Anjali Gautam** and Balasubramanian Raman, Segmentation of Ischemic Stroke Lesion from 3D MR Images using Random Forest, *Multimedia Tools and Applications*, **Vol. 78**, No.6, pp. 6559-6579, 2019.

9. **Anjali Gautam**, Balasubramanian Raman and Shailendra Raghuvanshi, A Hybrid Approach for the Delineation of Brain Lesion from CT Images, *Biocybernetics and Biomedical Engineering*, **Vol. 38**, No.3, pp. 504-518, 2018.

B. International Conference Papers Appear in Proceedings:

1. Neha Sarnaik, **Anjali Gautam**, Seema Kushwaha, Ravi Shanker. Convolutional Vision Transformer based Automatic Grading of Diabetic Retinopathy Images. In IEEE 8th Conference on Information and Communication Technology (CICT), 2024.

2. Aditya Vaishy, Suvramalya Basak, **Anjali Gautam**. Early Violence Recognition using Knowledge Distillation. In 9th International Conference on Computer Vision & Image Processing (CVIP), 2024.

3. Avinash Gaikwad, and **Anjali Gautam**. Segmentation of Hard Exudates And Hemorrhages from Diabetic Retinopathy Images Using Residual U-Net with Squeeze and Excite Blocks. In IEEE International Conference on Image Processing (ICIP-24), pp. 3064-3069. IEEE, 2024.

4. Suvramalya Basak, Aditya Vaishy, and **Anjali Gautam**. Multi-teacher Importance Preserving Knowledge Distillation for Early Violence Prediction. In International Conference on Pattern Recognition (ICPR-24), pp. 179-195, 2024.

5. Shruti Kumari, **Anjali Gautam**, Suvramalya Basak, and Nidhi Saxena. YOLOv8 Based Deep Learning Method for Potholes Detection. In 2023 IEEE International Conference on Computer Vision and Machine Intelligence (CVMI), pp. 1-6. IEEE, 2023.

6. Sneh Shah, Sristi Shah, Vaishnav Kamarti, Bandi Meghana, Praneeksha Jayam, Rashmi Singh, and **Anjali Gautam**. Hard Exudates Segmentation From Retinal Fundus Images. In 2023 IEEE 7th Conference on Information and Communication Technology (CICT), pp. 1-6. IEEE, 2023.

7. Harsh Garg, Ramavath Vasanth Naik, Tarun Harishchandra Pal, Mohit Kumar Mina, and **Anjali Gautam**. Brain Tumor Segmentation using the Modified UNET Architecture. In 2023 IEEE 7th Conference on Information and Communication Technology (CICT), pp. 1-6. IEEE, 2023.

8. **Anjali Gautam**, Satish Kumar Singh. Analysis of Deep Learning Models to Detect Breast Cancer from Histopathology Images. Accepted in 2023 IEEE REGION 10 CONFERENCE (TENCON).

9. Riya Shah, **Anjali Gautam** and Satish Kumar Singh. Overview of image inpainting techniques: A survey. In Proceedings of 2022 IEEE Region 10 Symposium (TENSYMP), pp. 1-6, IIT Bombay, IEEE, 2022.

10. Riya Shah, **Anjali Gautam** and Satish Kumar Singh. Generative Adversarial Networks for Inpainting Occluded Face Images. In Proceedings of 2022 IEEE 6th Conference on Information and Communication Technology (CICT), pp. 1-5, IIIT Gwalior, IEEE, 2022.

11. Durgapal, Prateek, Divyesh Rana, Saksham Aggarwal and **Anjali Gautam**, Defective Fruit Classification using Variations of GAN for Augmentation. In Proceedings of 2022 IEEE 9th Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON), pp. 1-6, IIIT Allahabad, IEEE, 2022.

12. **Anjali Gautam** and Balasubramanian Raman, Skin Cancer Classification from Dermoscopic Images using Feature Extraction Methods, In Proceedings of the 2020 IEEE Region 10 Conference (TENCON), pp. 958-963. IEEE, 2020.

13. **Anjali Gautam**, Debanjan Sadhya and Balasubramanian Raman, A Modified FCM Based Brain Lesion Segmentation Scheme for Medical Images, In Proceedings of 3rd International Conference on Computer Vision and Image Processing: CVIP 2018, Volume 2, pp. 149-159, IIITDM Jabalpur, Springer Singapore, 2020.

14. **Anjali Gautam** and Balasubramanian Raman, Automatic Segmentation of Intracerebral Hemorrhage from Brain CT Images, In Proceedings of the *International Conference on Machine Intelligence and Signal Analysis (MISP 17)*, pp. 753-764, IIT Indore, India.

15. **Anjali Gautam**, Priyanka Singh, Balasubramanian Raman and Harvendra Bhadauria, Automatic Classification of Leukocytes using Morphological Features and Naïve Bayes Classifier. In Proceedings of the IEEE *Region 10 Conference (TENCON)*, pp. 1023-1027, 2016, Singapore.

16. **Anjali Gautam** and Harvendra Singh Bhadauria, White Blood Nucleus Extraction using K-mean Clustering and Mathematical Morphing, In Proceedings of the *5th International Conference Confluence The Next Generation Information Technology Summit (Confluence- 2014)*, pp. 549-554.

17. **Anjali Gautam** and Harvendra Bhadauria, Classification of White Blood Cells based on Morphological Features, In Proceedings of IEEE *International Conference on Advances in Computing, Communications and Informatics (ICACCI- 2014)*, pp. 2363-2368, 2014, India.

18. **Anjali Gautam**, Harvendra Bhadauria and Annapurna Singh, White Blood Nucleus Segmentation using an Automated Thresholding and Mathematical Morphing, In Proceedings of the *International Conference on Advances in Engineering and Technology TheIRED*, pp. 31-35, 2014, India.

C. National/State Conference Papers Appear in Proceedings:

1. **Anjali Gautam**, Harvendra Bhadauria and Annapurna Singh, Extraction of White Blood Nucleus from Digital Microscopic Blood Image, In Proceedings of the *TQIP Sponsored National Conference on Technological Revolution in Electrical Engineering 2014 (TREE'14)*, Govind Ballabh Pant Institute of Engineering & Technology, Pauri, 2014.

2. **Anjali Gautam**, Balasubramanian Raman and Shailendra Raghuvanshi, Study of Brain Strokes in Uttarakhand People and their Segmentation and Localization from CT Images using Fuzzy Clustering Approach, In Proceedings of the *Uttarakhand State Science and Technology Congress 2017-2018*, UCOST, Vigyan Dham, Dehradun, 2018.

LIST OF CONFERENCES/WORKSHOPS ATTENDED

- 3rd IEEE International Conference on Computer Vision and Machine Intelligence (CVMI-2024) held in IIIT Allahabad during 19-20, October 2024.

- 1st IEEE International Conference on Computer Vision and Machine Intelligence (CVMI-2024) held in IIIT Allahabad during 12-13, August 2022.

- Online workshop on Universal Human Value on the theme "Inculcating Universal Human Values in Technical Education" during 23 - 27, July 2020, organised by All India Council for Technical Education (AICTE).

- 1st International Conference on Computer Vision and Image Processing (CVIP-2016) held in Department of Computer Science and Engineering, Indian Institute of Technology – Roorkee, Uttarakhand, India.

- 2nd International Conference on Computer Vision & Image Processing (CVIP-2017) and Workshop on Multimedia (WM-2017), it was held in Department of Computer Science and Engineering, Indian Institute of Technology – Roorkee, Uttarakhand, India.

- 9th Annual Conference of IRIA Uttarakhand Chapter, it was held in Himalayan Institute of Medical Sciences, Swami Ram Nagar, Jolly Grant, Dehradun, India.

- Workshop on Computer Vision and Image Processing, it was held in Electronics & ICT Academy, IIT Roorkee, Roorkee, India.

LIST OF WEBINARS ATTENDED

- Three Days national webinar/ video workshop on "Transforming Pedagogy in India" during 1- 3, August, 2020, organised by NIT Jamshedpur.

- One day webinar on "Professional Etiquettes Development Among Students" organised by National Institute of Technical Teachers' Training and Research, Bhopal on 16 July 2020.

INVITED TALKS/EXPERT LECTURES/CONVENER/COORDINATOR

- Event: Two days seminar on An Insight into Biometrics along with EEG for Digital Forensics using Machine learning and Deep Learning, 24-25 April 2023, Dr. Mahalingam College of Engineering & Technology, Pollachi, Tamil Nadu, INDIA. Topic: Deep learning architectures and it's selection.
  Role: Talk

- Event: Hands on Recent Deep Learning Models for Real World Problems, Faculty Development Programme by Academic Staff College in association with School of Computer Science and Engineering, 20 April 2023, VIT Vellore, Tamil Nadu, INDIA. Topic: Medical Image Segmentation and Applications of GAN Architecture
  Role: Talk

- Event: One Week National Level Workshop on Deep Learning and its Application, 14-19 November 2022, JSS Science and Technology University, Mysuru, INDIA. Topic: Deep Architectures: LeNet, AlexNet, ZF-Net, VGGNet, GoogLeNet, ResNet with Handson
  Role: Talk

- Event: International Conference on Computer Vision and Machine Intelligence (CVMI) 2022, 12-13 August 2022, IIIT Allahabad, Prayagraj, INDIA
  Role: Convener

- Event: 5th One-Week Self-Sponsored Short Term Course on Advances in Deep Architectures for Signal, Image & Vision Applications (ADASIVA) from Aug 8-13, 2022, IIIT Allahabad, INDIA. Topic: Recent Trends in Medical Image Analysis
  Role: Convener and Talk

- Event: Invited expert talk on March 26, 2022, Institute of Technology & Management, Gwalior, INDIA. Topic: Image Feature Extraction and its Applications towards Image Classification
  Role: Expert Talk

- Event: AICTE-ATAL Sponsored Five Days Faculty Development Program from Jan 17-21, 2022, Nagarjuna College of Engineering and Technology, Bangalore, INDIA. Topic: Applications of Deep Learning in Medical Images
  Role: Invited Talk

- Event: 4th Edition of Advances in Deep Architectures in Signal Image and Vision Applications from Dec 6-10, 2021, IIIT Allahabad, INDIA. Topic: Applications of Deep Learning in Medical

Image Segmentation
Role: Convener and Talk

- Event: Faculty Development Program on Advancement in Signal and Image Processing from Feb 8-12, 2021, Atria Institute of Technology Bangalore, INDIA. Topic: Applications of Deep Learning Role: Invited Talk

ADMINISTRATIVE RESPONSIBILITY

- Member PoSH: 28 June 2023 - Ongoing
- Warden GH-3: 08 January 2024 - Ongoing
- Warden GH-1: 01 September 2021 - 08 January 2024

ABROAD VISITS

- Presented a paper "
- Presented a paper "Automatic classification of leukocytes using morphological features and naïve Bayes classifier" in **IEEE TENCON** 2016 held in **Singapore, SINGAPORE** during 22-25 November 2016.

SESSION CHAIRS IN INTERNATIONAL CONFERENCES

1. IEEE UPCON 2022
2. International Conference on Computer Vision and Machine Intelligence (CVMI) 2022
3. 6th International Conference on Computer Vision & Image Processing (CVIP) 2021
4. International Conference on Control, Automation, Power and Signal Processing (CAPS) 2021

PROFESSIONAL ACTIVITIES

1. Reviewer of several conferences and SCI journals.
2. Volunteer of many international conferences and workshops.

PERSONAL DETAILS

Gender:	Female
Nationality:	Indian
Marital Status:	Married
Languages Known	Hindi and English

Anjali Gautam