## Dr. RAHUL DIXIT

Assistant Professor
Department of Artificial Intelligence
Sardar Vallabhbhai National Institute of Technology Surat
Ichchhanath, Keval Chowk, Surat – 395007, Gujarat, IN
Mobile: +91-9438867961
Email: rahul2012ism@gmail.com
ResearchGate: https://www.researchgate.net/profile/Rahul-Dixit-7
Google scholar: scholar.google.co.in/citations?user=v8yxEN8AAAAJ&hl=en
LinkedIn: https://www.linkedin.com/in/dr-rahul-dixit-b5b941b0/


## ACADEMIC QUALIFICATION

- Ph.D. - National Institute of Technology, Rourkela, Odisha, India
- M.Tech- Indian Institute of Technology Dhanbad, Jharkhand, India
- B.Tech- Uttar Pradesh Technical University, UP, India

## TEACHING EXPERIENCE

- Assistant Professor (Grade I- level 12) in the Department of Artificial Intelligence, SVNIT Surat, from Oct 2023 to present
- Assistant Professor (Grade II- level 11) in the Department of Computer Science and Engineering, IIIT Pune, from Jan 2022 to Oct 2023
- Assistant Professor (Grade II- level 10) in the Department of Computer Science and Engineering, IIIT Pune, from Jan 2020 to Jan 2022
- Assistant Professor (Adjunct) in the Department of Computer Science and Engineering, IIIT Pune, Aug 2019 – Jan 2020
- Assistant Professor in the Department of Computer and Communication Engineering, Manipal University Jaipur, from 07/2018 to 08/2019

## RESEARCH INTERESTS

- Medical Image Analysis
- AI in Healthcare
- Deep Learning for Medical Imaging
- Multimedia Security
- Medical Image Authentication

- Digital Image Processing
- Digital Image and Video Forensics
- Natural Language Processing

## PUBLICATIONS

### Books:

1. A. Roy, **R. Dixit**, R. Naskar and R. S. Chakraborty, "Digital Image Forensics – Theory and Implementation ", Springer, 2019. (ISBN: 978-981-10-7643-5) http://www.springer.com/us/book/9789811076435

2. R. Naskar, V.U. Sameer, **R. Dixit**, "Digital Forensics: Current Trends and Practices", Stadium Press LLC, USA, 2019. (ISBN: 978-93-85046-48-3).

### International Journals/Conferences:

### 2025

- *Skin Cancer Classification in Dermoscopic Images Using Multi-Scale Feature Map Fusion Based on Deep Learning*" (Authors: Rajpoot, Arvind, Dixit**, Rahul,** Shukla, Anupam); Journal: International Journal of Imaging Systems and Technology-Wiley)
- *Modeling of features of fusion using a hybrid swarm optimization algorithm with deep learning methodology for copy-move image forgery detection* (Authors: Sharma, Alesh Kumar, Tiwari, Ritu, **Dixit, Rahul,** Yadav, Mahendra Pratap, Journal: International Journal of System Assurance Engineering and Management)
- *Detecting AI-Generated Speech Manipulation through CNN-BiLSTM Hybrid Networks* (Authors: **Dixit, Rahul**, Agrawal, Arth, Dixit, Anuja, Tripathi, Sweta, Conf: 2025 7th International Conference on Signal Processing, Computing and Control (ISPCC))
- *Detecting audio forgery using deep learning techniques with attention mechanisms on ResNet++* (Authors: Das, Deep, **Dixit, Rahul**; Journal: Signal, Image and Video Processing-Springer)
- *Detection of Hidden Compression Artifacts in Re–Encoded Audio for Forensic Analysis* (Authors: **Dixit, Rahul,** Das, Deep, Dixit, Anuja; Journal/Conf: Preprint: Signal, Image and Video Processing-Springer)
- *A Robust Intelligent License Plate Recognition System for Vehicle Surveillance and Security Control* (Authors: Panda, Dev Sourav, Reshma, CH, **Dixit, Rahul;** Conf: 2025 3rd International Conference on Communication, Security, and Artificial Intelligence (ICCSAI))
- *Detecting AI-Generated Speech Manipulation through CNN-BiLSTM Hybrid Networks* (Authors: **Dixit, Rahul**, Agrawal, Arth, Dixit, Anuja, Tripathi, Sweta; Conf: 2025 7th International Conference on Signal Processing, Computing and Control (ISPCC).

- *Performant Multilingual Modulated and Multiplexed Memory Distilled Model with Adaptive Activation Ensembles* (Authors: Dikshit, S., **Dixit, R.**, Tiwari, R. Jain.; Journal: SN COMPUT. SCI. Springer)
- A Robust Intelligent License Plate Recognition System for Vehicle Surveillance and Security Control (Authors: Panda, Dev Sourav, Reshma, CH, Dixit, Rahul; Journal/Conf: 2025 3rd International Conference on Communication, Security, and Artificial Intelligence (ICCSAI))
- *An Ensemble Multi-CNN Framework for Enhanced Skin Cancer Classification* (Authors: Rajpoot, Arvind Singh, **Dixit, Rahul**, Shukla, Anupam; Journal/Conf: 2025 7th International Conference on Signal Processing, Computing and Control (ISPCC))

## 2024

- *Mathematical Model and AI Integration for COVID-19: Improving Forecasting and Policy-Making* (Authors: Panda, Dev Sourav, Dixit, **Rahul, Dixit**, Anuja, Dwaracherla, Harshitha, Shukla, Anupam; Journal/Conf: SN Computer Science-Springer)
- *Review and analysis for state-of-the-art NLP models* (Authors: Dikshit, Subrit, **Dixit, Rahul**, Shukla, Abhiram; Journal/Conf: International Journal of Systems, Control and Communications)
- *A Novel Approach to Detection of COVID-19 and Other Respiratory Diseases Using Autoencoder and LSTM* (Authors: Malviya, Anjali, **Dixit, Rahul**, Shukla, Anupam, Kushwaha, Nagendra; Journal/Conf: SN Computer Science-Springer)

## 2023

- *Long short-term memory-based deep learning model for covid-19 detection using coughing sound* (Authors: Malviya, Anjali, **Dixit, Rahul**, Shukla, Anupam, Kushwaha, Nagendra,; Journal: SN Computer Science springer)

## 2022

- *Revolutionary Solutions for Comprehensive Assessment of COVID-19 Pandemic* (Authors: Panda, Shradha Suman, Panda, Dev Sourav, **Dixit, Rahul;** Conf: Proceedings of International Conference on Computational Intelligence: ICCI 2021)
- *Forgery detection in medical images with distinguished recognition of original and tampered regions using density-based clustering technique* (Authors: Dixit, Anuja, **Dixit Rahul**; Journal: Applied Soft Computing)

## 2021

- A Novel Technique for Fake Signature Detection Using Two-Tiered Transfer Learning (Authors: Kuriakose, Yohan Varghese, Agarwal, Vardan, **Dixit Rahul**, Dixit, Anuja; Journal/Conf: Proceedings of International Conference on Computational Intelligence: ICCI 2020)
- An advanced susceptible-exposed-infectious-recovered model for quantitative analysis of COVID-19 (Authors: **Dixit Rahul**, Panda, Dev Sourav, Panda, Shradha Suman; Journal: Sadhana Springer)

- Medical image classification techniques and analysis using deep learning networks: a review (Authors: Sharma, Arpit Kumar, Nandal, Amita, Dhaka, Arvind, **Dixit Rahul**; Journal: Health informatics: a computational perspective in healthcare)
- Cognitive radio network-based design and security challenges in 5G communication (Authors: Dhaka, Arvind, Nandal, Amita, **Dixit Rahul**; Journal/Conf: Research Anthology on Developing and Optimizing 5G Networks and the Impact on Society)
- A DCT Fractional Bit Replacement Based Dual Watermarking Algorithm for Image Authentication (Authors: **Dixit Rahul**, Nandal, Amita, Dhaka, Arvind, Kuriakose, Yohan V, Agarwal, Vardan; Journal/Conf: Recent Advances in Computer Science and Communications (Formerly: Recent Patents on Computer Science))
- Classification of melanoma using efficient nets with multiple ensembles and metadata (Authors: Agarwal, Vardan, Jhalani, Harshit, Singh, Pranav, **Dixit Rahul**; Conf: Proceedings of International Conference on Computational Intelligence: ICCI 2020)
- LWT-DCT based image watermarking scheme using normalized SVD (Authors: **Dixit Rahul**, Nandal, Amita, Dhaka, Arvind, Agarwal, Vardan, Kuriakose, Yohan V; Journal: Recent Advances in Computer Science and Communications (Formerly: Recent Patents on Computer Science))

## 2020

- Copy-Rotate-Move Forgery Detection using Complex Wavelet Transform and Local Binary Pattern (Authors: **Dixit Rahul**, Naskar, Ruchira; Journal/Conf: 2019 10th International Conference on Computing, Communication and Networking Technologies (ICCCNT))
- Classification and measuring accuracy of lenses using inception model v3 (Authors: Jakhar, Shyo Prakash, Nandal, Amita, **Dixit Rahul;** Journal/Conf: Innovations in Computational Intelligence and Computer Vision: Proceedings of ICICV 2020)
- A survey on machine learning based brain retrieval algorithms in medical image analysis (Authors: Sharma, Arpit Kumar, Nandal, Amita, Dhaka, Arvind, **Dixit Rahul**; Journal/Conf: Health and Technology)

## 2019

- Copy-move forgery detection exploiting statistical image features (Authors: **Dixit Rahul**, Naskar, Ruchira, Journal/Conf: Digital Image Forensics: Theory and Implementation)
- Region duplication detection in digital images based on Centroid Linkage Clustering of key– points and graph similarity matching (Authors: **Dixit Rahul**, Naskar, Ruchira; Journal Multimedia Tools and Applications)
- Detection and localization of inter-frame video forgeries based on inconsistency in correlation distribution between Haralick coded frames (Authors: Bakas, Jamimamul, Naskar, Ruchira, **Dixit Rahul;** Journal: Multimedia Tools and Applications)

## 2018

- Copy–move forgery detection utilizing Fourier–Mellin transform log-polar features (Authors: **Dixit Rahul**, Naskar, Ruchira; Journal: Journal of Electronic Imaging)

## 2017

- Review, analysis and parameterization of techniques for copy–move forgery detection in digital images (Authors: **Dixit Rahul**, Naskar, Ruchira; Journal/Conf: IET Image Processing

- Copy-move forgery detection exploiting statistical image features (Authors: **Dixit Rahul**, Naskar, Ruchira, Sahoo, Aditi; Journal/Conf: 2017 international conference on wireless communications, signal processing and networking (WiSPNET))
- Blur invariant copy- move forgery detection technique with improved detection accuracy utilising SWT-SVD Authors: **Dixit Rahul**, Naskar, Ruchira, Mishra, Swati; Journal: IET Image Processing)
- A review on digital image watermarking techniques (Authors: Dixit, Anuja, **Dixit Rahul;** Journal: International Journal of Image, Graphics and Signal Processing)

### 2016

- Dct and dwt-based methods for detecting copy-move image forgery: A review (Authors: Dixit, Anuja, **Dixit Rahul**, Gupta, RK; Journal/Conf: International Journal of Signal Processing, Image Processing and Pattern Recognition)
- Detection of copy-move forgery exploiting LBP features with discrete wavelet transform (Authors: Dixit, Anuja, **Dixit Rahul**, Gupta, RK; Journal/Conf: International Journal of Computer Applications)
- DyWT based copy-move forgery detection with improved detection accuracy (Authors: **Dixit Rahul**, Naskar, Ruchira; Journal/Conf: 2016 3rd International Conference on Signal Processing and Integrated Networks (SPIN))

## PROFESSIONAL ACTIVITIES

Functioned as a peer reviewer for:

- Journal of Information Security and Applications-Elsevier
- Journal of Advances in Science, Technology and Engineering Systems-Elsevier
- Journal of Pattern Recognition-Elsevier
- IET Image Processing Journal
- Journal of Electronic Imaging

## CONFERENCE/ STTP/ FDP ORGANIZED

- TEQIP-III sponsored STTP (2020)
- TEQIP-III sponsored FDP on “Artificial Intelligence and its Modern Applications” (2020)
- International conference on "Artificial Intelligence for Resilient Happy Society 2022”
- Session chair, International Conference ICETICT-2024 (International Conference on Emerging Trends in Intelligent Computing Techniques-2024)
- Track Chair, 5th International Conference on Computational Intelligence (ICCI 2024)
- Organizing Secretary – International Conference on Recent Trends in Engineering and Sciences (RTES-2025), SVNIT Surat.
- Conducted STTP on “Multi-Modal Generative AI” from 16/12/2024 to 25/12/2024, SVNIT Surat.

## COURSE TAUGHT

- Information Retrieval
- Computer Network
- Human Computer Interaction
- Information Theory and Coding
- Database Management System
- Computer Organization
- Digital Image Processing
- Cryptography and Network Security
- Programming in C

**********