DR. NISHANT JAIN

Address: JAYPEE University of Information Technology, Waknaghat, Solan, HP- 173234
Email: nishantjain86@gmail.com **Contact No. :** +91-7895451577

Biography

Throughout my academic and professional journey, I have dedicated myself to advancing research in medical image processing, pattern recognition, and machine learning. With a Ph.D. and M.Tech. in Medical Image Processing from IIT Roorkee and extensive experience as an Assistant Professor at JUIT Waknaghat, I am eager to contribute my expertise in medical imaging, machine learning, and research guidance to support student development and organizational growth.

My work has resulted in numerous publications in top-tier international journals and conferences, including Q1 journals such as Biomedical Signal Processing & Control and Journal of Imaging Informatics in Medicine. I have successfully supervised multiple Ph.D., M.Tech., and B.Tech. students, fostering a research-oriented environment and guiding innovative projects, including patent-pending inventions such as an autonomous firefighting robot and solar-powered go-cart.

In my role at JUIT Waknaghat, I organize workshops, webinars, and FDPs on topics such as MATLAB for Image Analysis, VLSI Design, and Deep Learning, demonstrating my commitment to continuous professional development and knowledge dissemination. I also serve as a Warden, Webmaster, and active participant in organizing national and international conferences, which has honed my leadership and organizational skills.

My technical proficiency spans MATLAB, Python, C, LabVIEW, HTML, PHP, CSS, and embedded systems like Arduino, enabling me to develop and implement innovative solutions in medical imaging and related fields. Additionally, I am an active YouTuber with more than 200 videos uploaded on topics such as Python, image processing, machine learning, electrical science, and more, reflecting my passion for sharing knowledge and engaging with a broader community. I am particularly passionate about content writing, research guidance, and fostering entrepreneurship among students, as evidenced by my leadership in startup events and innovation challenges.

DR. NISHANT JAIN

Address: JAYPEE University of Information Technology, Waknaghat, Solan, HP- 173234
Email: nishantjain86@gmail.com **Contact No. :** +91-7895451577

Career Objective:

To obtain a challenging position in education and research, leveraging technical expertise to support student development, organizational growth, and national advancement. I am seeking a role that fosters professional growth and encourages resourcefulness, innovation, and flexibility.

Education:

2013-2017, **Doctor of Philosophy** (Ph.D.)
Indian Institute of Technology (IIT) Roorkee
Research Area: Medical Image Processing
Thesis Title: Segmentation and Classification of Liver Ultrasound Images

2010-2012, **Master of Technology** (M.Tech.)
Indian Institute of Technology (IIT) Roorkee
Research Area: Instrumentation & SIgnal Processing
Dissertation Title: Fusion based Enhancement of Medical Image

2005-2009, **Bachelor of Technology** (B.Tech.)
COER, Roorkee, Uttarakhand, **Uttar Pradesh Technical University (UPTU)**
Branch: Electronics & Communication Engineering

Experience:

Company: JUIT, Waknaghat   (May 2017- Present)
Position: Assistant Professor
Job Responsibilities:
- Research related to Vision System, Medical Image Processing and Machine Learning.
- Organizes technical workshops and webinars on Image Processing, Machine Learning and Entrepreneurship.
- Teaching Electronics and Communication Engineering, C-Programming and Medical Image Processing.
- Member of Technology Incubation and Entrepreneurship Development Cell at JUIT, Waknaghat.
- ECE Department Faculty Coordinator for Alumni.
- Webmaster: Managing JUIT's Website.
- Supervising Ph.D. Students.

Company: Dragonfly Education Private Limited   (July'2012 - July'2013)
Position: Subject Matter Expert
Job Responsibilities:
- Developed Technical Content on Basic Electrical Technology, Physics, Mathematics, Signal & System, Electronics, and Control System
- Instruct the animators to develop the animation on the subject.

DR. NISHANT JAIN

Address: JAYPEE University of Information Technology, Waknaghat, Solan, HP- 173234
Email: nishantjain86@gmail.com **Contact No. :** +91-7895451577

Technical Skill:

- MATLAB (Image and signal Processing)
- C
- Python
- LABVIEW
- HTML, PHP, CSS
- Embedded System (Arduino)

Area of Interest:

- Image Processing
- Pattern Recognition
- Machine Learning
- Embedded System
- Internet of Thing
- Content writing

Research Guidance

Ph. D. : 04 (ongoing)
M. Tech. : 02 (completed)
B. Tech: 11 (completed)

Ph.D. Students:
1. Lt. Pragya Gupta: Working on "Fusion Based Enhancement of CT and MR Images for Improved Diagnostic Decision-Making".
2. Mrs. Anjna Kumari: Working on "Enhancement, segmentation and classification of liver Ultrasound Images". Guided jointly as supervisor with Prof. Vinod Kumar, Retd. Professor & Deputy Director, IIT Roorkee
3. Mr. Munish Sood: Working on "Detection of ovarian cancer from Ultrasound images". Guided jointly as co-supervisor with Dr. Emjee Puthooran, Associate Professor, Department of ECE, JUIT.
4. Ms. Megha Puri: Working on "Development of Broad-spectrum Antibacterial and Anti-biofilm Formulations to Combat Bacterial Multi-drug Resistance". Guided jointly as co-supervisor with Dr. Jitendra Vashisht, Professor, Department of Biotechnology, JUIT.

M.Tech. Students:
1. Ms. Amit Roy: Dissertation titled "Anomaly Detection in Surveillance Videos" submitted in May 2024. Guided jointly as supervisor with Dr. Vikas Baghel, Assistant Professor, Department of ECE, JUIT.
2. Ms. Shailza Thakur (235011004): Dissertation titled "AI Based Predicting System for Tracking the Growth of Stevia rebaudiana under In vitro and in Hydroponic conditions" submitted in May 2025. Guided jointly as co-supervisor with Prof. Hemant Sood, Department of Biotechnology, JUIT.

DR. NISHANT JAIN

Address: JAYPEE University of Information Technology, Waknaghat, Solan, HP- 173234
Email: nishantjain86@gmail.com **Contact No. :** +91-7895451577

Research and Patent Publications:

International Journals: 6 (5 out of 6 in Q1 Journals)
International Conference Proceedings: 7

Journals:

1. M. Sood, E. Puthooran, and N. Jain, "Deep learning-based ovarian cyst classification and abnormality detection using convolutional neural networks," Neural Computing and Applications, vol. 37, no. 5, pp. 3047–3059, 2025. **(Q1 Journal)**
2. P. Gupta and N. Jain, "Segmentation-based fusion of CT and MR images," Journal of Imaging Informatics in Medicine, vol. 37, no. 5, pp. 2635–2648, 2024. **(SCIE, Scopus Indexed, Q1 Journal)**
3. P. Gupta and N. Jain, "Anisotropic diffusion filter based fusion of NSST transformed medical images," Biomedical Signal Processing and Control, vol. 90, p. 105819, 2024. **(SCIE, Scopus Indexed, Q1 Journal)**
4. N. Jain, A. Yadav, Y. Sariya, and Arun, "Analysis of Discrete Wavelet Transforms Variants for the Fusion of CT and MRI Images," The Open Biomedical Engineering Journal, vol. 15, no. 1, 2021.**(Scopus Indexed)**
5. N. Jain and V. Kumar, "Liver ultrasound image segmentation using region-difference filters," Journal of Digital Imaging, vol. 30, pp. 376–390, 2017. **(SCIE, Scopus Indexed, Q1 Journal)**
6. N. Jain and V. Kumar, "IFCM based segmentation method for liver ultrasound images," Journal of Medical Systems, vol. 40, pp. 1–12, 2016. **(SCIE, Scopus Indexed, Q1 Journal)**

Conference

1. P. Gupta and N. Jain, "Transfer Learning Based Fusion of CT and MR Images," in 2025 10th International Conference on Signal Processing and Communication (ICSC), IEEE, pp. 726–730, 2025.
2. P. Gupta and N. Jain, "Segmentation of CT images for efficient fusion with MR images," in 2024 IEEE International Conference on Computer Vision and Machine Intelligence (CVMI), IEEE, pp. 1–5, 2024.
3. A. Roy, N. Jain, and V. Baghel, "Estimation of Abnormal Crowd Density Using Transfer Learning Techniques," in 2024 15th International Conference on Computing Communication and Networking Technologies (ICCCNT), IEEE, pp. 1–5, 2024.
4. A. Kumari, N. Jain, and V. Kumar, "Neural Network Based CAD System for the Classification of Textures in Liver Ultrasound Images," in International Conference on Emergent Converging Technologies and Biomedical Systems, Springer, pp. 359–374, 2023.
5. A. Kumari, N. Jain, and V. Kumar, "Enhancement of Liver Ultrasound Images by Guided Image Filtering Technique," in 2022 International Conference on Signal and Information Processing (IConSIP), IEEE, pp. 1–5, 2022.
6. S. Rohilla, S. Yadav, and N. Jain, "Design and Analysis of Smart Shoe for Women Safety in Different Terrain," in 2021 6th International Conference on Signal Processing, Computing and Control (ISPCC), IEEE, pp. 556–560, 2021.

---

7. N. Jain and V. Kumar, "Approach towards automatic segmentation of diaphragm from ultrasound images," in Proceedings of the 4th International Conference on Image Information Processing (ICIIP), 2018.

Patents:

1. Patent published on "Autonomous Firefighting Robot System with Dynamic Sensor Fusion and AI-Enhanced Navigation." with B.Tech students: Abhishek Kumar, Utkarsh Sharma , Deepanshu , Sanat Jain, and Faculty Dr. Vikas Baghel. Date of Publishing: June 28, 2024.
2. Design Patent published on " Solar powered go-Cart " with Dr. Vikas Baghel and Prof. Shruti Jain, Date of Publishing: May 23, 2024.
3. Design Patent published on " Shoe " with B.Tech. students: Saransh Rohilla, Saanidhya Yadav and Faculty Dr. Dr. Anurag Vijay Agrawal, Date of Publishing: 3rd Feb, 2023.

Conferences / Workshop / Summer Training / FDP Organised

1. One week Faculty Development Program on "MATLAB for Image Analysis and Pattern Recognition: From Fundamentals to Advanced Applications", September 02 - 06, 2024. FDP was funded by Electronics & ICT Academy, Centre for Development of Advanced Computing (C-DAC), Mohali.
2. One week hands-on workshop on VLSI Design, 4-9, March, 2024.
3. Member of "3rd Emergent Converging Technologies and Biomedical Systems (ETBS 2023)", Jaypee University of Information Technology, Waknaghat, May 15-17, 2023.
4. Member of "2nd Emergent Converging Technologies and Biomedical Systems (ETBS 2022)", Jaypee University of Information Technology, Waknaghat, September 23-24, 2022.
5. Workshop on Image Processing with Deep Learning, 22nd - 26th March 2022
6. A virtual international conference on Technological Interventions in Renewable Energy for Sustainable Environment (RESE-2021), 24th and 25th November 2021
7. Organising committee member in the 6th International Conference on Signal Processing, Computing and Control (ISPCC 2k21), 7-9 Oct 2021.
8. Organiser of e-Summit 2021, 15-17, Oct 2021
9. 10 days "Online Workshop on Industrial Revolution 4.0", Jaypee University of Information Technology, Waknaghat, July 3 – Sept. 4, (every Saturday) 2021.
10. VICHARANA-2.0: Toy Innovation Challenge on 16th Feb 2021 under Technology Incubation and Entrepreneurship Development Cell (Incubation center) at JUIT.
11. Entrepreneurship Workshop 2020, 21-22 November 2020, 21st - 22nd Nov 2020
12. Organized VICHARANA-2020 (an ideathon event) on 17th Oct 2020 under Technology Incubation and Entrepreneurship Development Cell at JUIT.
13. Served as a Coordinator and a resource person in the National workshop on Emerging areas of research in Image processing-2020 organized between 06-12th Jan 2020.
14. National workshop on Bioinformatics and Biomedical Image Analysis 2019, 29-31 May 2019.

15. Organized Startup Weekend powered by Google for Entrepreneurs at JUIT Waknaghat in Sep, 2018.
16. Member of Organising committee of 4th IEEE International Conference on Signal Processing, Computing and Control, 21st – 23rd Sep, 2017.

Expert Lectures Delivered:

1. Delivered an expert lecture in one-week workshop on "Statistical Techniques in Biological, Computational and Medical Sciences" STBMS-2024. The title of the talk was "Introduction to Machine Learning Algorithms using Python". 10-15 June 2024.
2. Delivered a Lecture on "Artificial Intelligence of Things (AIoT)" on the National Science Day organized by Jaypee University of Information Technology, Waknaghat on 28th Feb 2024.
3. Delivered a Lecture on "CNN Models for the classification of Images" in One-Week Online Faculty Development Programme on "Machine Learning: Concepts and Applications", on 16th March 2023 organised by the Department of Computer Science & IT, Kathua Campus, University of Jammu, J&K (India).
4. Delivered an expert lecture in AICTE-ATAL FDP on "Machine Learning Applications to Optimization Based Control". Title of a lecture was "Machine Learning Applications in Biomedical signal and image Processing" organised by the Department of Instrumentation and Control, COEP Technological University, Pune.
5. Invited as a Resource Person in 6 Days Workshop on Python organised by UIT, Himachal Pradesh University, Shimla, 5-10 June 2023.
6. Keynote Speaker in the International Conference on Computational Intelligence & Engineering System Design (CIESD-21) organized by KIT, Kanpur on 27th Nov. 2021.
7. Keynote Speaker in a FDP on "A Deep Learning in the field of Automation: ML and IoT" organised by the Department with Research & Development cell, Bharti Vidyapeeth's college of Engineering from 8-12, July 2021.
8. Delivered an online webinar entitled "Fusion of Biomedical Imaging Modalities" on July 30, 2021 for the participants of Ramrao Adik Institute of Technology - D Y Patil University.
9. Lecture on "Machine Learning: Replicating Human Brain", organized through GoogleMeet, by ABVGIET, Pragatinagar, Himachal Prades on 7th June 2021
10. Lecture on "Computer Aided Diagnosis System for Medical Images", organized through GoogleMeet by Atria Institute of Technology, Bengaluru on 8th Feb 2021.
11. Delivered a talk on "Application of Artificial Intelligence in Medical Images" in 5 days FDP on "Artificial Intelligence: Algorithm and Application" organised by Poojya Doddappa Appa College of Engineering, Kalaburagi (Gulbarga) and sponsored by AICTE from 9th -13th Nov 2020. Talk was given on 12th Nov 2020.
12. Delivered a talk on research topic " Extraction of features for Classification of Abnormalities in Biomedical Image" in Short term course on Recent Advances in Signal and Image Processing organized in June 2019 organised by Department of ECE, JUIT
13. Delivered a talk and hands-on practice on "Biomedical Image Analysis" in National workshop on Bioinformatics and Biomedical Image Analysis 2019 organised by CEHTI, JUIT on 29-31 May 2019.

DR. NISHANT JAIN

Address: JAYPEE University of Information Technology, Waknaghat, Solan, HP- 173234
Email: nishantjain86@gmail.com **Contact No. :** +91-7895451577

14. Keynote speaker in "Emerging Trends in VLSI and Communication (ETVC-18)" held between June 9th – 18th, 2018 at JUIT, Waknaghat. Title of the talk was "Programming Paradigm on Optimization Tools".
15. Instructor for Tutorial Session in National Symposium on Medical Image Acquisition, Processing & Analysis at Jaypee University of Information Technology, Himachal Pradesh, India, 20th -22nd November, 2017.

Other Activities:

1. Served as an external examiner for the B.Tech Viva-Voce examination at University Institute of Technology (UIT), Himachal Pradesh University.
2. TPC Member in 2023 9th ICSC Conference held on 21-23 Dec 2023 at JIIT Noida.
3. Chaired a session in the 7th ICIIP conference organized by CSE , JUIT, Solan , 22-24 Nov 2023.
4. Chair a session in the prestigious 3rd International Conference on Emergent Converging Technologies and Biomedical Systems (ETBS-2023) organised by the Department of Electronics and Communication Engineering & Department of CSE/IT, JUIT on 15-17, May 2023.
5. Chaired a session in the Seventh International Conference on Parallel, Distributed and Grid Computing (PDGC-2022) organised by the Department of Computer Science & Engineering, Jaypee University of Information Technology, Waknaghat, Solan, HimachalPradesh, India during 25th-27th November 2022.
6. Chair a session in the prestigious 2nd Emergent Converging Technologies and Biomedical Systems (ETBS 2022), being organised by the Department of Electronics and Communication Engineering & Department of Physics and Materials Science, Jaypee University of Information Technology, Waknaghat, Himachal Pradesh, India on 23-24, Sept 2022 in Online Mode.
7. Co-Chair of Technical session in conference CERA-2017, held at IIT Roorkee in Sep' 2017.

Date: **(**Nishant Jain**)**