

SUMIT RAJ

Ph.D. (Thesis Submitted) | Computer Science & Engineering

National Institute of Technology, Jamshedpur

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Google Scholar: [Profile](#)

PROFESSIONAL SUMMARY

Research-oriented Computer Science and Engineering academic with a Ph.D. thesis submitted at **National Institute of Technology, Jamshedpur** and an M.Tech. from the same institute. Research interests include **Computer Vision, Medical Image Processing, Multimodal Image Fusion, Deep Learning, and Machine Learning**. Doctoral research focuses on feature enhancement using image fusion techniques for next-generation computing environments, including multimodal medical image fusion, image reconstruction, feature preservation, and deep learning-based image analysis.

EDUCATION

Degree	Institution	Year	CGPA / Status
Ph.D. in Computer Science & Engineering	NIT Jamshedpur	2026	8.33 Thesis Submitted
M.Tech.	NIT Jamshedpur	2021	7.90
B.Tech. in Computer Science & Engineering	Motihari College of Engineering	2016	8.10
Intermediate (12th)	T.N.B. College	2010	—
Matriculation (10th)	Gurukul High School	2008	—

Ph.D. Thesis: *Collaborative Approach for Feature Enhancement Using Image Fusion Techniques of Next Generation Computing Environments*

Supervisor: Dr. Binod Kumar Singh, Associate Professor, NIT Jamshedpur

M.Tech. Area: *Optimization in Large-Scale Data Using Metaheuristic Analysis*

RESEARCH INTERESTS

Computer Vision • Medical Image Processing • Multimodal Medical Image Fusion • Deep Learning • Machine Learning • Image Reconstruction & Enhancement • Feature Preservation & Enhancement • Explainable AI • Design & Analysis of Algorithms • Computer Architecture • Theory of Computation • Compiler Design

JOURNAL PUBLICATIONS

- SpFusionNet: Deep Learning-Driven Image Fusion with Spatial Frequency Analysis
- Mechanical Properties Prediction of Metakaolin and Fly Ash Based Geopolymer Concrete Using SVR

CONFERENCE PUBLICATIONS

- MedFuseNet: A Deep Hybrid Framework for MRI-CT Image Fusion and Reconstruction Enhancement in Medical Diagnostics
- Explainable Attention-Guided Deep Learning Framework for Multimodal Medical Image Fusion

PATENT APPLICATIONS

- A High Fidelity Multi-Modal Medical Image Fusion for Distributed Clinical Computing Environments**
Application No.: 202531119847 A | Date: 19 December 2025
- Unsupervised Autoencoder-Based Image Fusion for Enhanced Features Preservation in Medical Imaging**
Application No.: 202531119849 A | Date: 19 December 2025

TECHNICAL & ACADEMIC AREAS

AI & Machine Learning: Machine Learning, Deep Learning, Computer Vision, Medical Image Processing, Image Fusion, Image Reconstruction, Neural Networks, Explainable AI

Core Computer Science: Data Structures & Algorithms, Design & Analysis of Algorithms, Computer Architecture, Theory of Computation, Compiler Design

Research Competencies: Research Problem Formulation, Literature Review, Algorithm Development, Deep Learning Model Development, Experimental Evaluation, Performance Analysis, Scientific Writing, Patent Documentation

QUALIFICATIONS & ACHIEVEMENTS

- Qualified **GATE 2019**
- Qualified **GATE 2021**
- Two journal publications, two conference publications, and two patent applications in relevant research areas

ACADEMIC AREAS FOR TEACHING

Artificial Intelligence • Machine Learning • Deep Learning • Computer Vision • Image Processing • Data Structures & Algorithms • Design & Analysis of Algorithms • Computer Architecture • Theory of Computation • Compiler Design

PERSONAL DETAILS

Name: Sumit Raj **Location:** Bhagalpur, Bihar, India **Nationality:** Indian **Languages:** Hindi, English

DECLARATION

I hereby declare that the information provided above is true and correct to the best of my knowledge and belief.

Place: Bhagalpur, Bihar **Date:** 03 September 2026

Sumit Raj