Indian Institute of Technology Indore

Simrol, Khandwa Road, Indore 453 552

Dr. Puneet Gupta

Associate Professor, Department of Computer Science and Engineering

Webpage: http://www.iiti.ac.in/people/~puneet/

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Advertisement for Junior Research Fellow (JRF) position under ISRO sponsored project

IIT Indore invites applications from highly motivated, sincere, hardworking, and research-oriented candidates for the position of **Junior Research Fellow (JRF)** in the ISRO-sponsored project entitled **"Designing a Lightweight Deep Learning based Technique for HIS Segmentation"** of **Dr. Puneet Gupta** (PI of the project).

Project Details:
Hyperspectral imaging is a powerful remote sensing technology that captures detailed spectral information across multiple bands, making it invaluable for applications in agriculture, environmental monitoring, and medical diagnostics. However, the high spectral resolution of hyperspectral images introduces challenges such as spatial distortions, noise, and redundant information, complicating segmentation and classification. Traditional segmentation techniques, including clustering, thresholding, and superpixel segmentation, struggle to capture complex spectral-spatial relationships, while deep learning (DL)-based techniques often suffer from high computational costs and overfitting to spectral features. To address these challenges, this proposal aims to develop a lightweight DL-based hyperspectral image segmentation technique that balances computational efficiency with segmentation accuracy. Unlike existing techniques that rely on model compression approaches, such as pruning and knowledge distillation, our technique introduces a novel cube-based processing framework. Instead of processing entire images at once, hyperspectral data is divided into smaller spectral-spatial cubes, which are processed independently. A spectral fusion mechanism then integrates the outputs while preserving spectral-spatial coherence. The proposed technique will be optimized for deployment in resource-constrained environments, ensuring low computational overhead while maintaining high segmentation accuracy. Its effectiveness will be evaluated on edge computing platforms, making it suitable for real-world applications.

Fellowship: Consolidated emoluments – INR 37000 per month + House Rent Allowance (as per ISRO norms)

Tenure of the appointment: Initial appointment is for one year, which is extendable further based on performance. The appointment is co-terminus with the project. The selected candidate may be considered, through a separate process, for admission to the Ph.D. Programme as a regular full-time scholar as per the Institute norms.

Essential Qualification:

1. Master's degree (M.Tech./M.E. or M.S.) in CSE, IT, Electronics, and Electrical Engineering/ Technology (with first division in qualifying degree) AND GATE qualification in Computer Science and Information Technology (CS) or Data Science and Artificial Intelligence (DA) OR UGC-NET LS qualification

OR

M.Sc. degree in Mathematics (with first division as defined by the awarding Institute/ University) AND GATE qualification in Computer Science and Information Technology (CS) or Data Science and Artificial Intelligence (DA) OR UGC-NET-LS qualification

OR

Four-year Bachelor's degree (B.Tech. or B.S.) or Five-year integrated degree in CSE, IT, Electronics, and Electrical Engineering/ Technology (with first division in qualifying degree) AND valid GATE qualification in Computer Science and Information Technology (CS) or Data Science and Artificial Intelligence (DA).

Desirable Qualification: Candidates having high quality journal/conference papers in the areas of machine learning, deep learning and hyperspectral imaging, knowledge of programming (MATLAB, R, Python) are encouraged to apply.

How to Apply: Interested candidates are required to fill up this Google form latest by ***January 14th, 2026, 10:00 PM.*** Kindly note that incomplete applications will be rejected.

Link to the Google form: https://forms.gle/n9RR8qc9JKcPZsKT6

In case of any query, kindly mail to deeplearning@iiti.ac.in.

Venue, time and date of online interview: The link for online Google meet will be mailed to the selected candidates only and their interviews will be conducted on **16th January, 2026**. Kindly note that only the shortlisted candidates will be intimated by email for their interview details.

Note: The Institute reserves the right to fill or not to fill the post advertised.