



ONLINE FACULTY DEVELOPMENT PROGRAMME (FDP) ON

AI Innovations in Computer Vision and Medical Imaging: Emerging Trends and Research Perspectives

(15th May – 26th May 2025)

Organised by

Electronics & ICT Academy (Hub), NIT Warangal

In association with

National Institute of Technology, Raipur, Chhattisgarh-492010

(Sponsored by Ministry of Electronics and Information Technology (MeitY), GOI)



Preamble:

"Electronics & ICT Academy – Phase II" was set up at NIT Warangal with financial assistance from MeitY, GoI. This academy's role is to offer Faculty Development Programmes in standardized courses and emerging areas of Electronics, Information Communication Technologies, training & consultancy services for Industry, Curriculum development for Industry, CEP for working professionals, Advice and support for technical incubation and entrepreneurial activities.

About the FDP:

This Faculty Development Program (FDP) on Artificial Intelligence (AI) for Computer Vision and Medical Imaging Applications will help educators and researchers learn about AI basics and how it applies to Medical Imaging technologies with multiple security Applications. Participants will explore machine learning and deep learning concepts, focusing on using AI/ML for medical imaging which aids in diagnostics, health care, agriculture, retail and surveillance systems. AI plays a pivotal role in computer vision by enabling accurate and efficient authentication methods based on facial recognition, iris recognition, fingerprint analysis, and face recognition. Through hands-on activities and real-world examples, attendees will gain practical skills to use AI effectively with different algorithms in teaching and research. By the end of the program, participants will be ready to integrate AI tools into their work, improving their ability to teach and solve security challenges with modern technology. This will benefit participants by enhancing their expertise and teaching capabilities in these critical areas.

Major Course Contents:

- Introduction to computer vision, Biomedical and Medical image analysis applications.
- Machine Learning Basics, Working with data pre-processing and data visualization. Supervised and unsupervised learning methods, neural networks and applications.
- Introduction to Deep learning methods, and DL based other Architectures and its applications.
- CNN Architectures for computer vision, biometric and medical imaging implementation.
- AI for health care monitoring, human action recognition, medical diagnostic, Industrial applications.
- AI/ML for Biomedical imaging, CT Scan/MRI based image analysis, Fundus and medical images classifications.
- Object Detection/tracking algorithms like Yolo etc., Segmentation Algorithms like UNET etc.
- Activity/Biometrics Recognition using Tensor Flow/ PyTorch.
- CNN Architectures for biomedical image processing, computer vision and medical imaging implementation.
- Basics of Tensor Flow/Keras/PyTorch/Jupyter and Colab.
- Working with data pre-processing and data visualization using python/MATLAB.
- Hands-on session using Python/MATLAB.

Faculty conducting this programme:

The programme will be conducted by the faculty members from NIT Warangal; Academicians in the concerned field from IITs/NITs/IIITs are invited to deliver lectures in the programme. Speakers from industries are also expected to deliver as part of the course.

Registration Fee Particulars:

Faculty and Research Scholars	Rs.750/-
Industry Participants	Rs.2250/-

Participants need to pay the Registration Fee Online using the following details:-

Online Transfer Details
Account Name: Electronics & ICT Academy NITW
Account No: 62423775910
IFSC: SBIN0020149
Bank and Branch: State Bank of India, NIT (REC) Warangal

How to apply:

Participants are required to fill the online registration form by clicking on the following link:

<https://forms.gle/DZq5aHqGzp5octSb7>

Selection Criteria:

Selection will be done based on first-come-first-serve basis to a maximum number of 50 (fifty). Additionally, 10 participants from industry are allowed to participate. The list of selected participants will be intimated through e-mail. In case a candidate is not selected, the DD will be sent back. Candidates will be issued satisfactory certificates on successful completion of the course. Reservations are followed for selecting candidates as per GOI norms.

Important Dates:

Last date (Application & DD)	13.05.2025
Selection List by E- mail	14.05.2025
Duration	15.5.2025 to 26.5.2025

About NIT Warangal:

National Institute of Technology, Warangal is the first among 17 RECs setup as joint venture of the Government of India and the state government. Over the years, the college has established itself as a premier Institute imparting technical education of a very high standard leading to the B.Tech degrees in various branches of engineering, M.Tech. and Ph.D. programmes in various specializations. All B. Tech and M. Tech programmes of NIT Warangal are NBA accredited.

About NIT Raipur:

National Institute of Technology Raipur (Formerly Government Engineering College Raipur), situated in the capital of a newly incepted state of Chhattisgarh, has proven to be 'avant-grade' in the field of science and technology over past few decades in this region. With sweet memory of foundation ceremony by our president Hon'ble Dr. Rupendra Prasad on 14th September 1956. The institute started with two departments namely Metallurgical and Mining Engineering. Later the inauguration of the Institute building was done by our Prime Minister Hon'ble Pt. Jawaharlal Lal Nehru on 14th March 1963. From 1st December 2005, the institute has become the National Institute of Technology and hence joined the elite category of "Institute of National Importance". The institute currently offers 12 undergraduate, 11 Postgraduate (including M.C.A and M.Tech. in Applied Geology) and 18 Ph.D. programs. The institute offers facilities for Ph.D. and under takes R & D activities, provides testing, consultancy and other extension services including continuing education to the industry through the Industry Institute Interaction cell and the placement of the student through the Department of Training & Placement.

Coordinators

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