ONLINE FACULTY DEVELOPMENT PROGRAMME (FDP) ON

Generative AI in Computer Vision and Image Processing From Concepts to Applications

(2th June – 12th June 2025)

Organised by

Electronics & ICT Academy, NIT Warangal

In association with

Department of IT, Vasavi College of Engineering (Autonomous) Hyderabad, (T.S.) - 500031

(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 Generative AI in Computer Vision and Image Processing from Concepts to Applications will help educators and researchers learn about Generative AI basics and how it applies to computer vision and image processing technologies with multiple security Applications. Participants will explore machine learning and deep learning concepts, focusing on Generative AI in Computer Vision and Image Processing which aids in real world, 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 object detection/segmentation, facial recognition, iris recognition, fingerprint analysis, and face recognition. Through hands-on activities and real-world examples, attendees will gain practical skills to use Generative AI effectively with different algorithms in teaching and research. By the end of the program, participants will be ready to integrate Generative 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, image processing and feature engineering and its 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.
- Deep learning for computer vision, gesture, biometric and medical imaging implementation.
- Object Detection/tracking algorithms like Yolo etc., Segmentation Algorithms like UNET etc.
- Auto encoders and representation learning for CV applications.
- Introduction to GANs, advanced generative models, diffusion models and Foundation models.
- AI/ML for Biomedical imaging, CT Scan/MRI based image analysis, Fundus and medical images classifications.
- Real World applications, deep fake detection and ethics concerns, Edge AI deployment of generative models.
- Surveillance: super resolution and face aging, Health care: X-ray and MRI enhancement, research directions in generative AI and Vison.
- 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/QwLxcEEK9dMWMXwK6

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)	31.05.2025
Selection List by E- mail	01.06.2025
Duration and Time	2.6.2025 to 12.6.2025 10 to 12 and 2 to 4/6 PM

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 VCE (Autonomous) Hyderabad:

Founded in 1981 by Vasavi Academy of Education, Vasavi College of Engineering (VCE) represents a rich tradition of excellence in technology-based education. A premier-league institution among the affiliates of OU, Vasavi College of Engineering owes its vision to Sri Pendekanti Venkata Subbaiah, a veteran statesman of Independent India. The college is currently offering 7 UG and 4 PG programmes. The college has been granted autonomy by the University Grants Commission, New Delhi and Osmania University Hyderabad. The College is accredited by NAAC WITH 'A++' GRADE. The Department of Information Technology was established in the year 2000. The department offers a 4-year B.E. degree programme in Information Technology with an annual intake of 180 students with specific emphasis on engineering technologies and empirical mode of learning. We also offer an Honours degree - B.E IT in Artificial Intelligence and Machine Learning (AI&ML). The programme ensures that the student effectively meets the highest benchmarks of competence required by the industry. The programme is accredited by NBA for 3 Years in 2023 (2023-2026) Under TIER – I.

Coordinators

Dr. Md. Farukh Hashmi,
Assistant Professor Grade-I
Department of ECE
National Institute of Technology
Warangal – 506 004 (T.S.)
Email: mdfarukh@nitw.ac.in
Mobile No.: 6303817285

Dr. S .K. Chaya Devi
Associate Professor
Department of IT, Vasavi College of Engineering (Autonomous), Hyderabad (T.S.)- 500031
Email:skchayadevi@staff.vce.ac.in
Mobile No.: 7330820404