

**A Report on One Day Hands on Training**  
**“Computer Vision and Image Processing Fundamentals Using Python and OpenCV”**  
**Organized by Department of Electrical & Electronics Engineering**  
**in Association with MITS – IETE Students Forum (ISF) and ECE**  
**04.10.2025**



**Report Submitted by:** Dr Nehru Kandasamy, Professor, Department of Electronics & Communication Engineering.

**Resource Person Details:** Dr. P. Anandan, Associate Professor, School of Computers, VIT Chennai.

**Participants:** EEE, Data Science, CST and ECE Students of MITS Madanapalle and External participants from other engineering colleges.

**Venue:** Seminar Hall- A

**Time:** 10.00 am to 1.30 pm

**Report Received on** 18.10.2025.

**Mode of Conduct:** Offline

All esteemed guests and dignitaries are cordially invited for the seminar program. After that Dr. A. V. Pavan Kumar HoD/EEE given welcome address followed by Dr. P Ramanathan, Principal, MITS, shared his views about importance of learning technology among students. Dr. Dipankar Roy Dean Engineering addressed about future education and skill development among students. Dr. S. Rajasekaran, HoD/ECE, shares information about opportunity towards image processing and python. Finally, Mr N Sridhar gave vote of thanks for providing this wonderful opportunity.



Computer vision's importance lies in enabling machines to interpret visual data, with applications in self-driving cars, medical imaging, and security. Using Python, a popular choice for its extensive libraries like [OpenCV](#), is crucial for its simplicity and power in building and deploying computer vision applications. Fundamentals include understanding concepts like image acquisition, processing, and analysis, and key metrics like [intersection over union](#) (IoU) to evaluate model accuracy.



### Importance of computer vision:

- **Revolutionizing industries:** It automates tasks in manufacturing, agriculture, and retail, which leads to improved efficiency and cost savings.
- **Enhancing safety and security:** It is vital for self-driving cars to "see" and react to their environment, and it improves security through facial recognition and anomaly detection in surveillance.
- **Advancing healthcare:** It helps medical professionals by enhancing medical scans, enabling early detection of diseases, and aiding in diagnosis.
- **Improving accessibility:** It can assist people with disabilities through applications like image recognition and sign language translation.

### Conclusion:

Computer vision uses algorithms to enable computers to interpret and understand the visual world, and Python is a popular language for this field due to its extensive libraries like [OpenCV](#) and [NumPy](#). Fundamentals include reading and manipulating images, performing transformations, and feature extraction. Python, combined with libraries, supports both basic operations and advanced applications like object detection, facial recognition, and augmented reality.