



माधव प्रौद्योगिकी एवं विज्ञान संस्थान, ग्वालियर (म.प्र.), भारत

Madhav Institute of Technology & Science, Gwalior (M.P.), INDIA

Deemed University

(Declared under Distinct Category by Ministry of Education, Government of India)

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Activity Report of One-Week Faculty Enablement Program (Peer to Peer Learning)

on

“Computer Vision”

Following the instructions provided in the Notice with reference. No. DA/2025/08, **One week Faculty Enablement Program (Peer to Peer Learning)** titled “Computer vision” for newly joined faculty members, is successfully conducted from 1/5/25 to 7/5/25. The total participants were 29, and the resource persons for the training were **Dr. Tej Singh and Dr. Pawan Dubey, Assistant Professor, Center for AI, Madhav Institute of Technology & Science, Gwalior, MP, India.** Under the supervision of **Dr. Rajni Ranjan Singh Makwana, Head of Centre for Artificial Intelligence CAI,** the program was completed with the facilities of Lab M 105. The notable highlights of the workshop in different days (sessions) are presented below:

1. **Day 1:** Participants were introduced to the fundamentals of Computer Vision and Image processing by **Dr. Tej Singh**. Thereafter in the Second session, a hands-on was conducted to introduce the online Computer Vision implementation frameworks with basic image processing commands.
2. **Day 2:** **Dr. Pawan Dubey** delivered various transforms employed in computer vision and image processing. The hands-on session for the day involved implementing the mentioned transforms for image enhancement on participant-chosen images with the above-mentioned framework.
3. **Day 3:** **Dr. Tej Singh** discussed various features and the descriptors, such as SHIFT to extract features from the images for various applications. The hands-on practice session was conducted on topics discussed in an earlier session for the day.
4. **Day 4:** **Dr. Pawan Dubey** discussed various color models, e.g., RGB, HSV, etc., employed in various image processing feature extraction processes. The hands-on practice session was also conducted with some implementation aspects.
5. **Day 5:** **Dr. Tej Singh** discussed various fundamentals of Deep Learning, and **Dr. Pawan Dubey** discussed the implementation aspects of classification models with examples. The later session was concluded with hands-on practice for Deep Learning model implementation and a valedictory group photograph.

The schedule of the program is attached in **Appendix 1**. The session-wise CO Mapping of the program is attached in **Appendix 2**. The Notice of the program is attached in **Appendix 3**. List of participants and evaluation Quizzes and assignments are attached in **Appendix 4**. The



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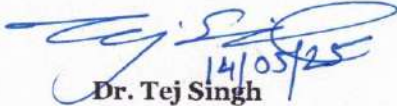
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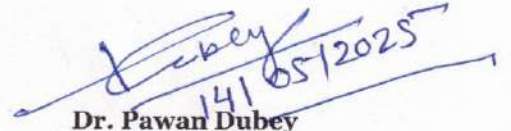
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attendance of the participants is attached in **Appendix 5**. The feedback of the program from the participants is attached in **Appendix 6** and finally, the **glimpses** are presented in **Appendix 7**.


14/05/25

Dr. Tej Singh

Asst. Professor


14/05/2025

Dr. Pawan Dubey

Asst. Professor


14/05/25

Dr. R R Singh

Head of the Department



Centre of Artificial Intelligence

Appendix 1

Schedule of Peer-Learning Training Programme on **Computer Vision**

Date	Time	Session Contents
1 May, 2025 (Thursday)	11:00 AM to 01:00 PM	Introduction to Computer Vision
	02:00 PM to 04:00 PM	Fundamentals of Image Processing <i>Day-1 Assessment</i>
2 May, 2025 (Friday)	11:00 AM to 01:00 PM	Image Transformations
	02:00 PM to 04:00 PM	Image Enhancement Techniques <i>Day-2 Assessment</i>
5 May, 2025 (Monday)	11:00 AM to 01:00 PM	Feature Detection and Description
	02:00 PM to 04:00 PM	Hands-on session on Feature Detection and Description. <i>Day-3 Assessment</i>
6 May, 2025 (Tuesday)	11:00 AM to 01:00 PM	Color Fundamentals and Processing
	02:00 PM to 04:00 PM	Hands-on session on Color Image Processing <i>Day-4 Assessment</i>
7 May, 2025 (Wednesday)	11:00 AM to 01:00 PM	Deep Neural Architecture and Applications of Computer Vision
	02:00 PM to 04:00 PM	Quiz <i>Day-5 Assessment</i>

Note:

- At the end of each day, an assessment will be conducted to assess the learning outcomes.
- For the successful completion of the training programme, the participating faculty members have to mandatorily attend all the sessions and attempt the daily assessments.
- **Venue: Centre for Artificial Intelligence (Room 104/105)**


DR. TEJ SINGH


Dr. Pawan Dubey



Centre of Artificial Intelligence

Appendix 2

Computer Vision

Course Outcomes (COs) for Computer Vision

CO1: Describe the role of cameras, sensors, and color spaces in imaging.

CO2: Explain key concepts in computer vision (e.g., image formation, filtering, edge detection).

CO3: Implement basic image operations (filtering, transformations, histogram equalization).

CO4: Use OpenCV/Python for tasks like noise removal, edge detection, and morphological operations.

CO5: Apply feature matching techniques for object recognition and stitching (e.g., panorama creation).

CO6: Design and train CNNs for classification (ResNet, VGG).

Date	Time	Session Contents	COs
1 May, 2025 (Thursday)	11:00 AM to 01:00 PM	Introduction to Computer Vision	CO1
	02:00 PM to 04:00 PM	Fundamentals of Image Processing <i>Day-1 Assessment</i>	CO1,2
2 May, 2025 (Friday)	11:00 AM to 01:00 PM	Image Transformations	CO2,3
	02:00 PM to 04:00 PM	Image Enhancement Techniques <i>Day-2 Assessment</i>	CO2,3
5 May, 2025 (Monday)	11:00 AM to 01:00 PM	Feature Detection and Description	CO3,4
	02:00 PM to 04:00 PM	Hands-on session on Feature Detection and Description. <i>Day-3 Assessment</i>	CO4,5
6 May, 2025 (Tuesday)	11:00 AM to 01:00 PM	Color Fundamentals and Processing	CO3,4
	02:00 PM to 04:00 PM	Hands-on session on Color Image Processing <i>Day-4 Assessment</i>	CO 4
7 May, 2025 (Wednesday)	11:00 AM to 01:00 PM	Deep Neural Architecture and Applications of Computer Vision	CO 5,6
	02:00 PM to 04:00 PM	Quiz <i>Day-5 Assessment</i>	



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Appendix 3

NOTICE

Ref: DA/2025/08

Date: 22.04.2025

Revised schedule for Faculty Enablement Program (Peer to Peer Learning)

In continuation to notice no. 466 dated 26.03.2025 from the office of Dean, FoET, following is the **revised schedule** for the conduction of Faculty Enablement Program (Peer to Peer Learning).

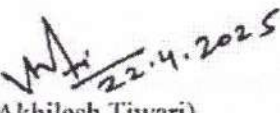
S.No.	Course Module Name	Course Module Faculty	Coordinating Centre/Department	Date
1	Python Programming	Dr. Dhananjay Bisen Dr. Saurabh Kumar Rajput	Centre for IoT	15 th to 22 nd April 2025
2	AI & ML	Dr. Nishant Jain Dr. Rahul Dubey	Department of CSE	15 th to 22 nd April 2025
3	*Data Science	Dr. Bhagat Singh Raghuwanshi Dr. Abhishek Bhatt	Centre for AI	23 rd to 29 th April 2025
4	*Computer Vision	Dr. Tej Singh Dr. Pawan Dubey	Centre for AI	1 st May to 7 th May 2025

**All the newly joined faculty members are required to participate mandatorily in the Data Science and Computer Vision modules, as per above schedule.*

Coordinating department / centre / course module faculty is required to prepare the schedule and circulate the same to all the participants under intimation to Dean, FoET & Dean Academics.

Dr. Saurabh Kumar Rajput will interface / coordinate with the concerning department / centre for the fulfillment of all relating aspects. After the completion of the course module, assessment/test to be conducted by the course faculty members and graded E- certificate to be issued to all the participating faculty members.

The HoD of the coordinating department / centre is requested to submit the detailed report after the completion of the module.


(Dr. Akhilesh Tiwari)
Dean, Academics

Copy to:

1. Concerning Course module faculty members
2. HoDs of Coordinating Department / Centre
3. Dr. Saurabh Kumar Rajput, Centre for IoT - for needful action
4. Dean, FoET for information
5. Hon'ble Vice Chancellor



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Appendix-4

Quizzes and Assignment Marks

Sr. No.	Faculty Name	Department Name	Quiz-1	Assign-1	Quiz-2	Quiz-3	Quiz-4	Quiz-5	Total Marks (50)
1	Dr. Muktesh Gupta	CAI	5	4	10	10	10	10	49
2	Dr. Neelam Sharma	CAI	5	3	10	10	10	10	48
3	Dr. Mausam Chouksey	CAI	5	4	10	10	10	10	49
4	Dr. Nand Kishore Joshi	CAI	5	3	10	10	10	10	48
5	Dr. Anurag Singh Tomar	CAI	5	4	10	10	10	10	49
6	Dr. Satyam Omar	CAI	5	4	10	10	10	10	49
7	Dr. Rupam Srivastava	C-IOT	5	3	10	10	10	10	48
8	Dr. Abhishek Narwaria	C-IOT	5	3	10	10	10	10	48
9	Dr. Rohit Ralli	C Engg.	5	3	10	10	10	10	48
10	Dr. Mohit Kumar	C Engg.	5	4	10	10	10	10	49
11	Dr. Raghvendra Sahu	C Engg.	5	4	10	10	10	10	49
12	Dr. Mali Shivashankar	C Engg.	5	4	10	10	10	10	49
13	Dr. Reema Bera	C Engg.	5	4	10	10	10	10	49
14	Dr. Gulshan Soni	CS & BS	5	3	10	10	10	10	48
15	Dr. Kirti Raj Bhatele	CS & E	5	4	10	10	10	10	49

Dr.

Dr.



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16	Dr. Manojjeet Roy	CS & E	5	4	10	10	10	10	10	49
17	Dr. Saurabh Agarwal	CS & E	5	4	10	10	10	10	10	49
18	Dr. Ashish Tomar	CS & E	5	4	10	10	10	10	10	49
19	Dr. Shreshth Gupta	E & TE	5	2	10	A	A	A	A	17
20	Dr. Praween K Nishad	E & TE	5	2	10	A	A	A	A	17
21	Dr. Yogesh Kumar	E & TE	5	4	10	10	10	10	10	49
22	Dr. Shailendra Singh	Elect. Engg.	5	4	10	10	10	10	10	49
23	Dr. Kumar Gaurav	Elect. Engg.	5	4	10	10	10	10	10	49
24	Dr. Nidhi Humnekar	MAC	5	5	10	10	10	10	10	50
25	Dr. Anand Pawar	MAC	A	A	A	A	A	A	A	0
26	Dr. Kuldeep K Tiwari	MAC	5	3	10	10	10	10	10	48
27	Dr. Khushboo Punia	App. S	A	A	A	A	A	A	A	0
28	Dr. Akansha Soni	Architecture	5	4	10	10	10	10	10	49
29	Dr. Sumit Dhariwal	CAI	5	4	10	10	10	10	10	49

* FEEDBACK *

Appendix 5

Timestamp	Technical Accuracy	Clarity & Specificity	Code/Implementation on Review	Quality of study material shared during training*	How satisfied are you with this event?*
2025/05/07 3:39:48 PM GMT+5:30	5	5	5	5	5
2025/05/07 3:39:57 PM GMT+5:30	4	4	4	4	4
2025/05/07 3:40:00 PM GMT+5:30	5	5	5	5	5
2025/05/07 3:40:04 PM GMT+5:30	5	5	5	5	5
2025/05/07 3:40:58 PM GMT+5:30	5	5	5	5	5
2025/05/07 3:41:00 PM GMT+5:30	5	5	4	5	5
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2025/05/07 3:52:37 PM GMT+5:30	5	5	5	5	5
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2025/05/07 4:03:21 PM GMT+5:30	5	5	5	5	5
2025/05/07 4:28:45 PM GMT+5:30	4	4	5	4	4
2025/05/07 4:38:58 PM GMT+5:30	5	5	5	5	5
2025/05/07 4:40:22 PM GMT+5:30	5	5	5	5	5
2025/05/07 5:39:56 PM GMT+5:30	4	4	4	4	4
2025/05/07 11:12:26 PM GMT+5:30	5	5	5	4	5



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MITS

Sr. No.	Faculty Name	Department Name	1 May 2025	2 May 2025	5 May 2025	6 May 2025	7 May 2025
1	Dr. Muktesh Gupta	Centre for Artificial Intelligence					
2	Dr. Neelam Sharma	Centre for Artificial Intelligence					
3	Dr. Mausam Chouksey	Centre for Artificial Intelligence					
4	Dr. Nand Kishore Joshi	Centre for Artificial Intelligence					
5	Dr. Anurag Singh Tomar	Centre for Artificial Intelligence					
6	Dr. Satyam Omar	Centre for Artificial Intelligence					
7	Dr. Rupam Srivastava	Centre for Internet of Things					
8	Dr. Abhishek Narwaria	Centre for Internet of Things					
9	Dr. Rohit Ralli	Civil Engineering					
10	Dr. Mohit Kumar	Civil Engineering					
11	Dr. Raghvendra Sahu	Civil Engineering					
12	Dr. Mali Shivashankar	Civil Engineering					
13	Dr. Reema Bera	Civil Engineering					
14	Dr. Gulshan Soni	Civil Engineering					
15	Dr. Kirti Raj Bhatele	C S & Business System					
16	Dr. Manojjeet Roy	C S & E					
17	Dr. Saurabh Agarwal	C S & E					
18	Dr. Ashish Tomar	C S & E					
19	Dr. Shreshth Gupta	C S & E					
20	Dr. Praween K Nishad	E & TE					
21	Dr. Yogesh Kumar	E & TE					
22	Dr. Shailendra Singh	Electronics Engineering					

7/5/2025

Signature





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23	Dr. Kumar Gaurav	Electronics Engineering	Dr. Kumar Gaurav	Dr. Kumar Gaurav
24	Dr. Nidhi Humnekar	Mathematics and Computing	Dr. Nidhi Humnekar	Dr. Nidhi Humnekar
25	Dr. Anand Pawar	Mathematics and Computing	Dr. Anand Pawar	Dr. Anand Pawar
26	Dr. Kuldeep K Tiwari	Mathematics and Computing	Dr. Kuldeep K Tiwari	Dr. Kuldeep K Tiwari
27	Dr. Khushboo Punia	Applied Science	Dr. Khushboo Punia	Dr. Khushboo Punia
28	Dr. Akansha Soni	Department of Architecture	Dr. Akansha Soni	Dr. Akansha Soni
29	Dr. Sumit Dhariwal	Centre for Artificial Intelligence	Dr. Sumit Dhariwal	Dr. Sumit Dhariwal

Dr. Nidhi Humnekar
10/05/2023

Dr. Nidhi Humnekar
10/05/23

Dr. Nidhi Humnekar