



**Hope Foundation's
International Institute of
Information Technology
(I²IT), Pune**

P-14, Rajiv Gandhi Infotech Park, Phase-
I, Hinjawadi, Pune-411057

**Value Added Course
on
“Image Processing Using
Neural Nets”**

Held at

**Department of
Information Technology**

**On
10/01/2020 to 11/01/2020**



Hope Foundation's
**International Institute of
Information Technology**

P-14, Rajiv Gandhi Infotech Park, Phase - 1, Hinjawadi, Pune - 057

Department of Information Technology

Academic Year 2019 - 2020

Date: 09th Jan 2020

To,
The Principal,
I²IT, Hinjawadi,
Pune-411057

Subject: Application to organize value added course on “**Image Processing Using Neural Nets**” on 10th Jan 2020 & 11th Jan 2020.

Respected Madam,

Department of Information Technology would like to organize a value added course on “**Image Processing Using Neural Nets**” on 10th Jan 2020, 11th Jan 2020 from 8:30 am to 04:30 pm for Information Technology Department Students.

The session will be conducted by Mr. Dinesh Kulkarni, Mr. Chaitnya Kulkarni & Ms. Neha Deshmukh from Techlead India Private Limited Pune.

I request you to permit us to organize the same and following are the objectives and outcomes of the course.

Thanking you in anticipation,

Course Objectives:

1. To provide an exposure to both basics and recent advances in digital image processing to the students.
2. To learn Python, OpenCV, and TensorFlow in hands-on sessions.
3. To learn machine learning techniques for the analysis of digital image data sets.
4. To understand the nature of problems solved with machine learning techniques.



**Hope Foundation's
International Institute of
Information Technology (I²IT), Pune
Department of Information Technology**

Academic Year 2019-20

NOTICE

Date: 9th Jan 2020

All the students of Information Technology Department are here by informed that the Department is going to organize a value added course on "Image Processing Using Neural Nets" from 10th Jan 2020 to 11th Jan 2020. The course will be of 14 hours fully hands on from 8:30 AM to 4:30 PM. The students need to register to course by paying Rs 800/- on or before 10th Jan 2020.

Take the advantage and gain the knowledge of image processing using neural nets by attending the course.

Keshav

Prof. Keshav Tambre
Coordinator

Saoji

Prof. Saoji Sarang
HOD IT

Display on

n.b.

Saoji



Hope Foundation's
International Institute of Information Technology

Department of Information Technology
Academic Year 2019-20

Value Added Course on "Image Processing Using Neural Nets"

Date: 10th & 11th Jan 2020

Sr. No	Name of Student	Class	Signature			
			10-01-20	10-01-20	11-01-20	11-01-20
			8:30-12:45	1:30-4:30	8:30-12:45	1:30-4:30
			Session I	Session II	Session I	Session II
1	Mandilkar Abhishek	SE				
2	Verma Kamal	SE				
3	Pawar Atharv	SE				
4	Fatnani Chirag	SE				
5	Arora Sajal	TE				
6	Nair Darshana	TE				
7	Sonar Siddhi	SE				
8	Aishwarya Kulshrestha	SE				
9	Kirit	SE				
10	Thorat Shalaka	TE				
11	Belote Om	TE				
12	Kajulkar Roshan	TE				
13	Beedkar Aishwarya	TE(CS)				
14	Palvi Acharya	SE				
15	Tandel Suraj	SE				
16	Shrawage Shreyas	SE				
17	Papade Prathmesh	SE				
18	Chajmal Ashutosh	TE				
19	Karve Prabhav	TE				
20	Naidu Kishor	TE				
21	Naxane Tanvi	TE				
22	Chauhan Ankit	TE				
23	Bisht Niharika	SE				
24	Kamal Kant	TE				
25	Patil Yogesh	TE				

Prof. Keshav Tambre
Co-ordinator

Prof. Saoji Sarang
HOD(IT)



Hope Foundation's
International Institute of Information Technology
 Department of Information Technology

Feedback of Value Added Course on "Image Processing Using Neural Nets "
 Academic Year 2019-20

Timestamp	1. Trainer was well prepared on topics	2. Trainer's command on subject	3. Sessions were interactive & interesting	4. Pace and clarity of teaching /lecture	5. Appropriate emphasis on fundamentals and advanced topics	6. Contents & coverage of course	7. Usefulness of assignments/e examples discussed	8. Enhancement of your skills & knowledge on topic	9. Organization of Course	10. Overall Rating of Course
2020/01/11 5:01:59 pm GMT+5:30	10	10	9	9	9	10	10	10	10	10
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International Institute of Information Technology
 Department of Information Technology

Feedback of Value Added Course on "Image Processing Using Neural Nets "

Academic Year 2019-20

Timestamp	1.Trainer was well prepared on topics	2.Trainer's command on subject	3. Sessions were interactive, informative & interesting	4. Pace and clarity of teaching/ lecture	5. Appropriate emphasis on fundamentals and advanced topics	6. Contents & coverage of course	7. Usefulness of assignments/e xamples discussed	8. Enhancement of your skills & knowledge on topic	9. Organization of Course	10. Overall Rating of Course
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2020/01/11 5:04:08 pm GMT+5:30	9	9	9	9	9	9	9	9	9	9
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2020/01/11 5:17:08 pm GMT+5:30	8	9	9	8	8	9	9	9	9	9
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2020/01/11 5:20:54 pm GMT+5:30	9	9	9	9	9	9	8	9	9	9
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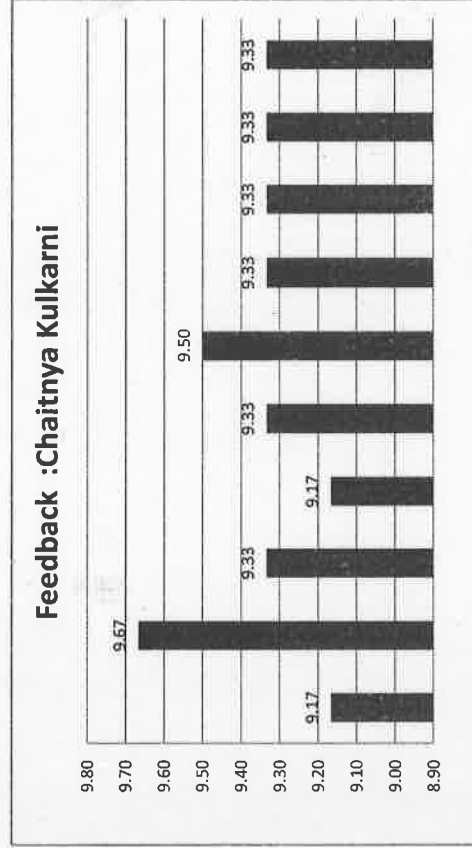
Hope Foundation's
International Institute of Information Technology
 Department of Information Technology

Feedback of Value Added Course on "Image Processing Using Neural Nets "

Academic Year 2019-20

Timestamp	1.Trainer was well prepared on topics	2.Trainer's command on subject	3. Sessions were interactive, informative & interesting	4. Pace and clarity of teaching/lecture	5. Appropriate emphasis on fundamentals and advanced topics	6. Contents & coverage of course	7. Usefulness of assignments/examples discussed	8. Enhancement of your skills & knowledge on topic	9. Organization of Course	10. Overall Rating of Course
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2020/01/11 5:21:06 pm GMT+5:30	10	10	10	9	9	10	9	10	10	10
2020/01/11 5:21:29 pm GMT+5:30	9	10	8	8	9	9	8	8	8	8
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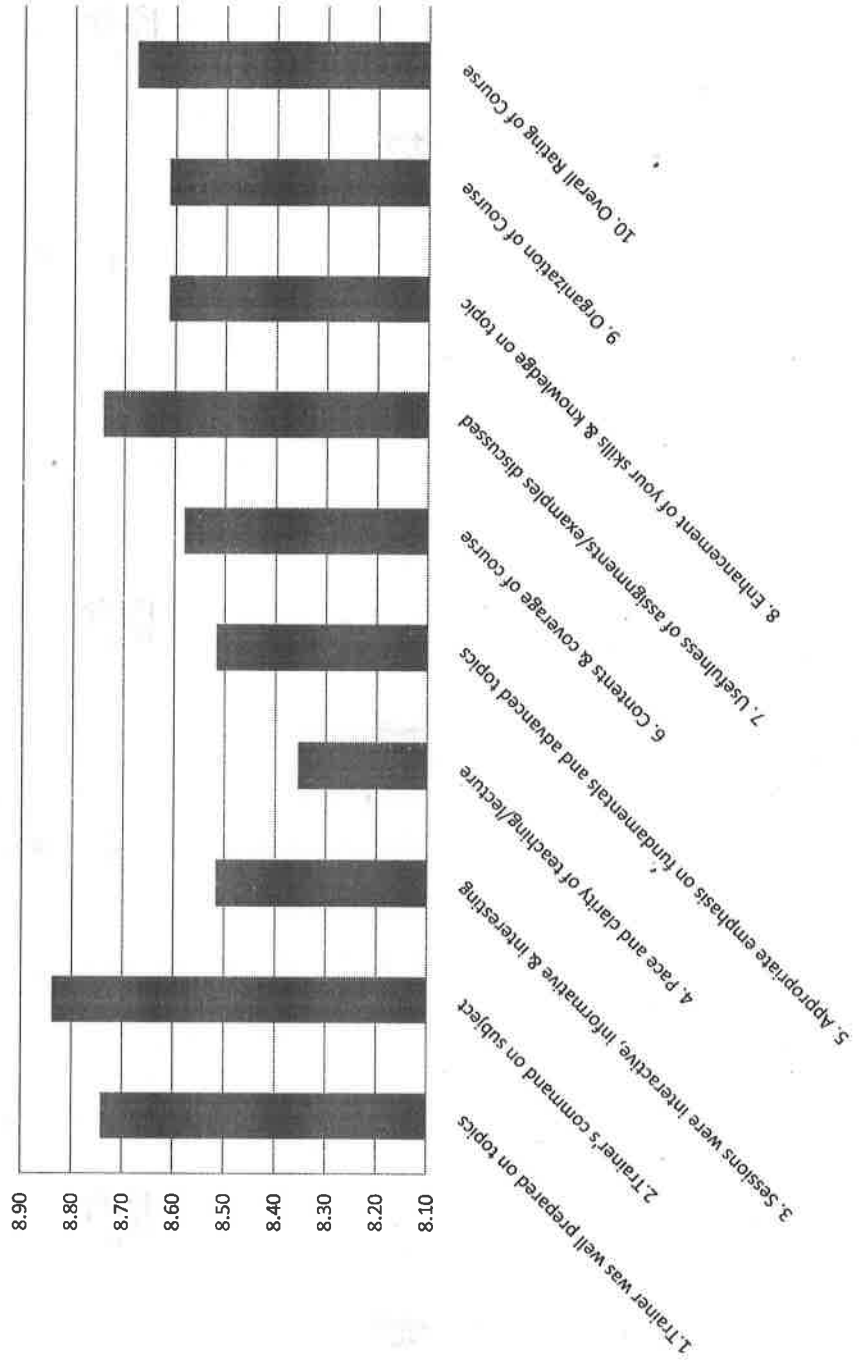
1. Trainer was well prepared on topics	9.17
2. Trainer's command on subject	9.67
3. Sessions were interactive, informative & interesting	9.33
4. Pace and clarity of teaching/lecture	9.17
5. Appropriate emphasis on fundamentals and advanced topics	9.33
6. Contents & coverage of course	9.50
7. Usefulness of assignments/examples discussed	9.33
8. Enhancement of your skills & knowledge on topic	9.33
9. Organization of Course	9.33
10. Overall Rating of Course	9.33



HOD(IT)

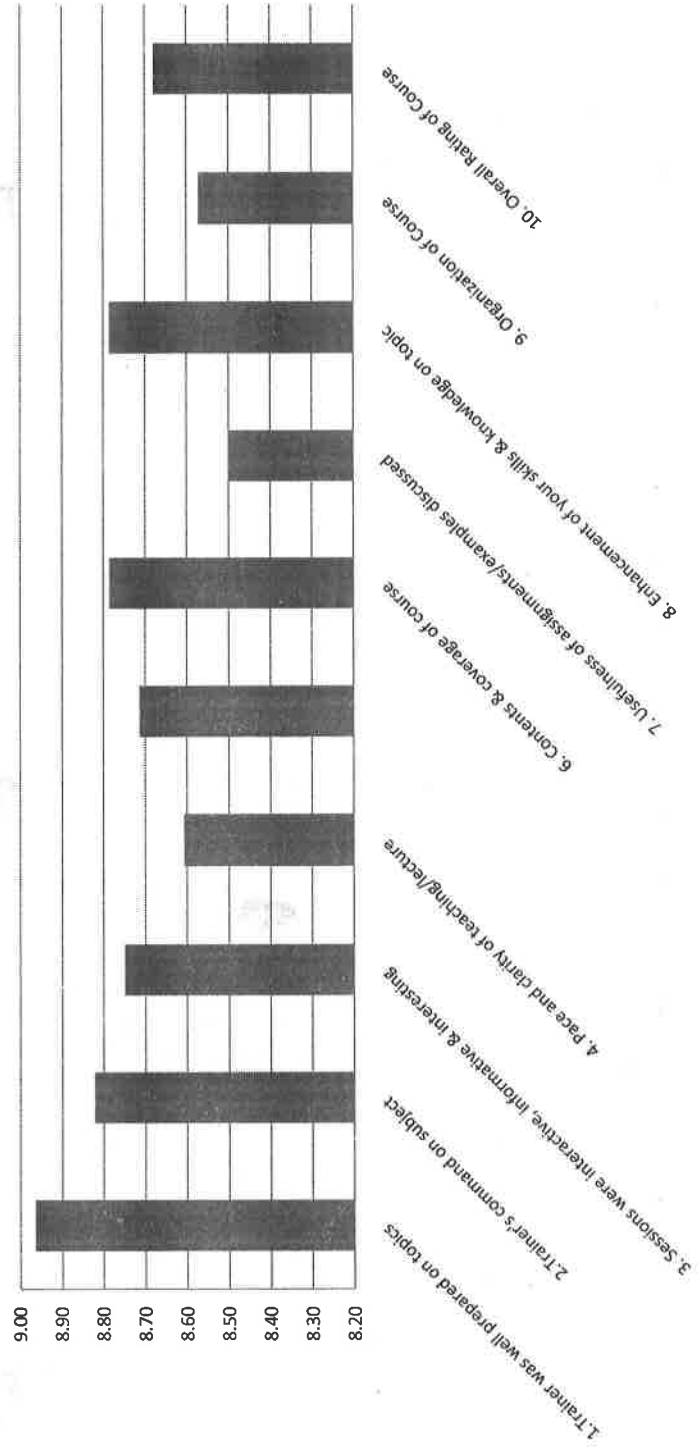
1.Trainer was well prepared on topics	8.74
2.Trainer's command on subject	8.84
3. Sessions were interactive, informative & interesting	8.52
4. Pace and clarity of teaching/lecture	8.35
5. Appropriate emphasis on fundamentals and advanced topics	8.52
6. Contents & coverage of course	8.58
7. Usefulness of assignments/examples discussed	8.74
8. Enhancement of your skills & knowledge on topic	8.61
9. Organization of Course	8.61
10. Overall Rating of Course	8.68

Feedback : Dinesh Kulkarni



1. Trainer was well prepared on topics	8.96
2. Trainer's command on subject	8.82
3. Sessions were interactive, informative & interesting	8.75
4. Pace and clarity of teaching/lecture	8.61
5. Appropriate emphasis on fundamentals and advanced topics	8.71
6. Contents & coverage of course	8.79
7. Usefulness of assignments/examples discussed	8.50
8. Enhancement of your skills & knowledge on topic	8.79
9. Organization of Course	8.57
10. Overall Rating of Course	8.68

Feedback : Neha Deshmukh





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[Hope Foundation is recognized as a Scientific and Industrial Research Organization (SIRO) by the Dept. of Scientific and Industrial Research (DSIR), Ministry of Science and Technology, Govt. of India]

Date: 11th Jan 2020

Ref No. I2IT/2019-20/IT/565

To,
Ms. Neha Deshmukh
Techlead Engg. Software Private Limited, Pune

Subject: Letter of Appreciation

Dear Sir,

We would like to convey our sincere thanks for being here at our International Institute of Information Technology, Pune and devoting your valuable time and knowledge for conducting a value Added Course on "Image Processing Using Neural Nets".

We also thank you for sharing your ideas and guiding the students.

We expect same type of bonding for future events at our institute.

With Regards,



Prof. Saoji Sarang
HoD, Department of Information Technology,
I²IT, Hinjawadi.

Head of Department
Information Technology
International Institute of Information Technology
Hinjawadi, Pune - 411057



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Date: 11th Jan 2020

Ref No. I2IT/2019-20/IT/564

To,
Mr. Chaitanya Kulkarni
Techlead Engg. Software Private Limited, Pune

Subject: Letter of Appreciation

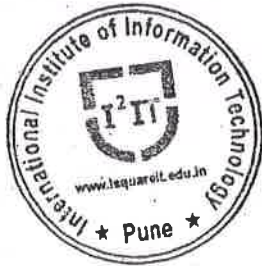
Dear Sir,

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With Regards,



Prof. Saoji Sarang
HoD, Department of Information Technology,
I²IT, Hinjawadi.

Head of Department
Information Technology
International Institute of Information Technology
Hinjawadi, Pune - 411057



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Date: 11th Jan 2020

Ref No. I2IT/2019-20/IT/566

To,

Mr. Dinesh Kulkarni
Techlead Engg. Software Private Limited, Pune

Subject: Letter of Appreciation

Dear Sir,

We would like to convey our sincere thanks for being here at our International Institute of Information Technology, Pune and devoting your valuable time and knowledge for conducting a value Added Course on "Image Processing Using Neural Nets".

We also thank you for sharing your ideas and guiding the students.

We expect same type of bonding for future events at our institute.

With Regards,

Prof. Saoji Sarang

HoD, Department of Information Technology,

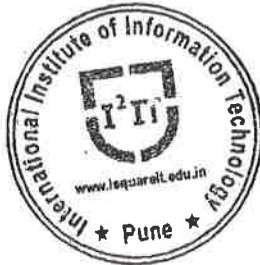
I²IT, Hinjawadi.

**Head of Department
Information Technology**

International Institute of Information Technology
Hinjawadi, Pune.- 411057

Received

11/01/2020



VALUE ADDED COURSE REPORT

Image Processing by Using Neural Nests

The value added course arranged by IT department conducted by industry Experts from Techlead Engineering Private Limited company. It was really brainstorming and worth learning. Following concepts were taught in the 2-day value-added course (10th January and 11th January 2020).

Day 1:

Session I:

It was an introductory session and was conducted by Dinesh Kulkarni. He explained right from beginning i.e. using VScode and learning basic concepts of Python. He taught data Structures such as strings, tuples lists and dictionaries and their methods. Further, he introduced to object oriented programming approach and how negative indices can be used in Python. After that he made students familiar with the Numpy package of Python that is used for performing all mathematical numerical operations

“It was a pre-requisite for Image Pre-processing. He taught how slicing happens in numpy 1D, 2D and 3D arrays.

Session II:

This was a post-lunch session in which Ms. Neha Deshmukh gave a brief description about what exactly they work on types of projects they have done, products of their company. Then started with basic discussion of what is an image, how is its size calculated (in storage / pixel terms). She made it very clear why Image processing needs to be done and how numpy arrays are used for image processing. Then, she discussed image types (Grayscale and colorful, RGB and Hsv) and their file formats.

She discussed the steps related to how Image processing can be done (Image Enhancement Restoration, Compression, Morphological Processing and Segmentation) Students searched the functions and compared the results. It was fully a hands-on session. She gave explanation about Noise Removal Techniques by using various types of filters such as

Gaussian Sobel etc

She elaborated how a kernel is convolved onto image and how feature extraction takes place. Later we discussed Histogram equalization Normalization and Histogram Matching methods and also tried some of them, thereby concluding the session.

Day 2:

Session I:

This session was conducted by Dinesh Kulkarni. He theoretically described the types of Machine learning, Supervised learning that includes Regression, Classification; unsupervised learning consisting of clustering; Semi-Supervised Learning and Reinforcement Learning. He discussed how a problem can be approached, deciding whether it is Machine Learning problem, Deciding the Model, Preprocessing Data, Training the Model and testing it.

Then he explained how Neural Networks (specifically CNN) are used for Image Processing. He taught us the concept of feed forward and back propagation which makes 1 epoch, and various activation functions used for such networks.

Later on, Mr. Chaitanya Kulkarni explained how convolution Neural Network (CNN) works and what it consists of i.e. convolution Layer (kernel extracting Features). Max Pooling Layer and many such hidden layers and lastly an Activation Function Flattening layer followed by more hidden layers and output layer with the respective activation function.

Mr. Chaitanya gave a brief description of Dropout Layer, Dense Layer and why and when should they be used. We installed the required packages / Tensorflow and Keras) for building CNNs and he told that student will perform a 3-class classification Wine CNN in next session.

Session II:

It was purely a programming session. Mr. Chaitanya shared a code of 3-class classification problem using CNN in which model had to predict whether given image is of a Dog Cat/ Panda. He explained the functions line-by-line, why are they used, what will be the outcome, do's and don'ts while generating and training the model. Finally executed the code and get respective outputs according to the test images, and he concluded the course. It was really an enjoyable, interesting session and whole course was structured well and organized. Indeed the course was a good experience and exposed a new era which was worth exploring.



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International Institute of Information Technology (I²IT)

Hinjawadi, Pune- 411057

Department of Information Technology

Photographs of value added Course

Date: 10/01/2020



Keshav

Prof. keshav Tambre

Value Added Course Coordinator

Sarang

Prof. Sarang Saoji

HoD IT



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Hope Foundation's
International Institute of Information Technology
P-14, Rajiv Gandhi Infotech Park, Phase - I, Hinjawadi, Pune - 411 057



Certificate of Participation

This is to certify that
Mandilkar Abhishek
participated in two days Value Added Course on “**Image Processing by Using Neural Nets**” held on 10th to 11th January 2020 organized by the Department of Information Technology, Hope Foundation's International Institute of Information Technology(I²IT), Pune.

Prof. Sarang Saoji
HoD (IT)

Mr. Sagar Deshmukh
Head, Product Division
Techlead Software Engineering Private Limited, Pune

Dr. Vaishali Patil
Principal



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P-14, Rajiv Gandhi Infotech Park, Phase - I, Hinjawadi, Pune - 411 057



Certificate of Participation

This is to certify that

Varma Kamal

participated in two days Value Added Course on **“Image Processing by Using Neural Nets”** held on 10th to 11th January 2020 organized by the Department of Information Technology, Hope Foundation's International Institute of Information Technology(I²IT), Pune.

Prof. Sarang Saoji
HoD (IT)

Mr. Sagar Deshmukh
Head, Product Division
Techlead Software Engineering Private Limited, Pune

Dr. Vaishali Patil
Principal



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Certificate of Participation

This is to certify that

Pawar Atharv

participated in two days Value Added Course on **“Image Processing by Using Neural Nets”** held on 10th to 11th January 2020 organized by the Department of Information Technology, Hope Foundation's International Institute of Information Technology(I²IT), Pune.

Prof. Sarang Saoji
HoD (IT)

Mr. Sagar Deshmukh
Head, Product Division
Techlead Software Engineering Private Limited, Pune

Dr. Vaishali Patil
Principal