

TEQIP-III Sponsored Short Term Course on

**MACHINE LEARNING FOR IMAGE AND VIDEO RECOGNITION**

January 07 - 11, 2019

**Course ID: CEP/STC/2018/ID/2**



**Course Coordinators:**

Dr. Debashis Nandi (Department of CSE)  
Dr. Mrinal Kanti Mandal (Department of Physics)

National Institute of Technology Durgapur  
Mahatma Gandhi Avenue  
Durgapur 713 209

Last date of registration: December 31, 2018

## **THE INSTITUTE**

National Institute of Technology Durgapur (NITD) is a leading technical institute offering undergraduate, postgraduate and doctoral programmes in various disciplines of engineering, technology, science, social science and management. The education system is holistic with equal importance being attached to all-round development of the students. NITD was established as a Regional Engineering College (REC) in 1960 as a joint venture of the Government of India and Government of West Bengal. REC Durgapur was converted to NIT Durgapur under the full administrative and financial control of the Ministry of Human Resource Development of Government of India with a Deemed University status on 3rd July, 2003. Subsequently NITD has been given the status of a University by the UGC Act. The Institute was declared an **Institute of National Importance** by the Government of India on August 15, 2007.

The city of Durgapur is recognized as one of the fastest developing Tier-II cities in the national scenarios. Durgapur is situated at a distance of about 180 KMs from Kolkata. It is located right on the major railway and expressway (NH-2) connecting Kolkata to Delhi and Durgapur can be reached from Kolkata (and vice versa) in ~ 2 hrs. 30 mins.

## **THE DEPARTMENT**

Department of Computer Science and Engineering of NIT Durgapur is one of the leading Departments in terms of teaching qualities and research activities. The department has been offering undergraduate course in CSE and IT. Within a very short span of time, the department has created an excellent learning environment with dedicated young faculty members, technical staff, 'state-of-the-art' laboratories and innovative academic processes. The department provides computational facilities for system level programmers, application development and research. The Department, over the years, is successfully undergoing several projects sponsored by the DST and DIT, Government of India. A number of students are working at present for their Ph.D. degrees undergoing research under supervision of several faculties. Theoretical and experimental investigations are being carried out in the frontier areas like Modeling & simulation of Networks, Optical Burst Switched Network, Distributed Systems, Wireless Networks, Knowledge Management, data mining and Case based reasoning, Swarm Robotics, Soft computing, cryptography and network security, VLSI testing, distributed computing, software engineering, image processing, algorithms and applications, chaos and security, bioinformatics and several other allied and interdisciplinary domains. The department has been offering three post graduate courses. Many students who have received their M.Tech degrees from this Department are serving now in different Institutes of higher learning in India.

## **ABOUT THE SHORT TERM COURSE**

Image and video recognition widely used in the area of navigation, target recognition, manufacturing, photo interpretation, remote sensing, and computer aided medical diagnostic systems etc. and makes it an active area of research recently. The use of machine learning algorithms in image and video recognition has got tremendous importance for storming performance in increasing the recognition accuracy. Machine learning is, particularly, driven by the idea that computer algorithms and the systems can improve their own performance with time. It has evolved from the relatively “knowledge-free” general purpose learning system, the “perceptron”, and decision-theoretic approaches for learning to symbolic learning of high-level knowledge, artificial neural networks, and genetic algorithms. With the recent advances in hardware and software, a variety of practical applications of the machine learning research is emerging. Recently, “Deep learning” has become a buzzword in machine learning and is used to solve many image and video recognition problems with higher efficiency.

The objectives of the short term course is to bring the researchers and technocrats from different parts of our country to a common gathering for exchanging and sharing the knowledge about the recent developments in machine learning and its applications in image and video recognition to solve real life problems.

## TOPICS TO BE COVERED

- Digital Image Reconstruction and Processing
- Image processing via sparse representation
- Video processing
- Applications of pattern recognition and Classification
- Character Recognition

## RESOURCE PERSONS

The resource persons constitutes experts/senior faculty members from NIT Durgapur and various guest speakers from other reputed institutions and industries including ISI, BESU, IIT, Industries, Research Institutes, etc.

## WHO CAN ATTEND THE COURSE

The course is aimed to attract and bring together Faculty Members, Scientists, Engineers, Technologists, Research Scholars and Final Year UG/PG students from Academic and Research Institutions and Industries. The participants will be benefitted immensely and will get new insights and knowledge about the topic through close interactions/discussions with the Senior Faculty Members/Scientists and Experts of the respective field during the lecture sessions as well as in some laboratory sessions.

## BOARDING & LODGING

Boarding, lodging and travel expenses shall be borne by the participants. Several good hotels are available in and around Durgapur. Participants may contact directly or through the coordinator(s) for accommodation in Hotels.

## REGISTRATION FEES

<b>Participants</b>	<b>Fees</b>
Participants from Academic/ Research Institutes Faculty/Staff Member and Research Scholars/Students	Rs. 2000/-
Members from Industries	Rs. 4000/-

*Registration fee includes study/lecture materials, refreshment and lunch for 5 days during the course.*

**Last date of registration: December 31, 2018**

## ORGANIZING COMMITTEE:

### **Chairman**

Prof. G. Sanyal, HOD, Dept. of CSE

### **Joint Coordinators:**

Dr. Debashis Nandi, Dept. of CSE

Dr. Mrinal Kanti Mandal, Dept. of Physics

### **Members:**

Dr. Subhrabrata Choudhury

Dr. Sajal Mukhopadhyay, Dept. of CSE

Dr. Baisakhi Chakraborty, Dept. of CSE

Mr. Subhankar Majhi, Dept. of CSE

Dr. Debashis Mitra, Dept. of CSE

Dr. Jaydeep Howlader, Dept. of CSE

Dr. Animesh Dutta, Dept. of CSE

Dr. Dipanwita Das, Dept. of CSE

Dr. Nandadulal Jana, Dept. of CSE

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NATIONAL INSTITUTE OF TECHNOLOGY, DURGAPUR  
Department of Computer Science and Engineering  
M.G. Avenue, Durgapur – 723109, West Bengal

REGISTRATION FORM

TEQIP-III Sponsored One Week Short Term Course on  
**MACHINE LEARNING FOR IMAGE AND VIDEO RECOGNITION**  
Course ID: CEP/STC/2018/ID/2  
January 07 - 11, 2019

1. Name: -----
2. Designation & Affiliation: -----
3. Male/Female:-----
4. Mailing Address:-----
5. Telephone No.: \_\_\_\_\_ & \_\_\_\_\_ ( M)
6. E-mail ID : -----
7. Highest Academic Qualification:-----
8. Working Experience (In nos. of Years): -----
9. Accommodation required (Payment basis) (Y/N):-----
10. Registration fees: Cheque/DD no. \_\_\_\_\_ Date \_\_\_\_\_ Amount **Rs. 2000/4000**  
In favour of **“CEP NIT Durgapur”**
11. Vegetarian / Non-Vegetarian: -----

Place: \_\_\_\_\_

*Signature of the Applicant*

Date: \_\_\_\_\_

*Signature and Seal of the Head of the Department/Institute*

***N.B.: Please ensure that all the fields (1 to 11) are properly filled-in and then duly signed. Photocopy of this form may also be used for registration. Please send the completed application form to the Course Coordinator.***

**CORRESPONDING ADDRESS**

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