



POORNIMA

COLLEGE OF ENGINEERING

Promoted by Shanti Education Society, Affiliated to Rajasthan Technical University & Approved by AICTE

Report on

Two-day Weekend Training Program Saptahaant Shikshak Prashikahn

(SSP) on Introduction to Machine Learning

- ♦ **TITLE AND DURATION:** Two-day Weekend Training Program Saptahaant Shikshak Prashikahn (SSP) on “Introduction to Machine Learning” (16th December and 17th December, 2017)
- ♦ **SPONSORS:** IIT Kharagpur
- ♦ **SUPPORTERS:** Poornima College of Engineering, Jaipur (Remote Centers)
- ♦ **ORGANIZERS:** Computer Engineering Department
- ♦ **OBJECTIVES:** - The Saptahaant Shikshak Prashikshan will provide an opportunity to acquire knowledge about current technological developments in relevant fields. It will not only promote the professional practices relevant to technical education but also will motivate the faculty to achieve competitive teaching and learning environment. Participating teachers will attend live lectures delivered by IIT Kharagpur faculty at the Remote Centers on a Saturday & Sunday. The lecture transmission and live interaction will take place in distance mode using the A VIEW technology.
- ♦ **EXPECTED OUTCOMES:**

Participants pursuing this course should be able to:

1. Identify real world situations where Machine Learning Techniques are suitable / more efficient than other approaches.
2. Formulate the real life problem as an appropriate machine learning problem.
3. Understand the inner workings of existing machine learning techniques.
4. Understand the principles behind designing new machine learning techniques.

♦ **BROCHURE / POSTER / LEAFLET / FLYER:**



TWO-DAY WEEKEND TRAINING PROGRAMME



Saptahaant Shikshak Prashikshan (SSP)

on

Introduction to Machine Learning

Date: 16th December and 17th December, 2017

(By: IIT Kharagpur)

**Remote Centre:
Poornima College of Engineering, Jaipur**

♦ **PROGRAM SCHEDULE:**

In the department of Computer Engineering, a Two Day Weekend Training Programme Napiahaant Shikshak Prashikshan (SSP) on Introduction to Machine Learning was successfully conducted under the National Mission on Education through ICT (MHRD, Govt. of India) by IIT Kharagpur at Poornima College of Engineering (RFID code - 1107) on December 16 and December 17, 2017. This training programme was registered and attended by total 25 faculty members of Department of Computer Engineering. Information Technology and Electronics Engineering with the permission of Dr. Om Prakash Sharma, Director, PCE. The day wise details of the topics covered during this programme are given below.

♦ **MODELS:**

**Day 1: Inauguration Ceremony with Introduction on Machine Learning and Learning
Saturday- December 16, 2017**

With the inauguration ceremony of SSP on the introduction to machine learning, the first day session began which was taken by the Professor Pawan Goyal, IIT Kharagpur. He conducted our 1.30 hours consecutive lectures on the topics (I) Introduction to ML, Supervised Learning: classification and Regression, (II) Supervised Learning: Generalization, Bias-variance, Cross-validation, Unsupervised Learning Clustering. Dimensionality Reduction, (III) Neural works Algorithms for Training Gradient Descent (GD), Stochastic Gradient Descent Back-propagation, and (IV) Recurrent Neural Networks (RNN). Convolutional Neural works (CNN).

All the topics were explained with the sufficient number of examples.

Day 2: Discussion on Graphical Models, Kernel and Ensemble Methods, and ending with Quiz and Valedictory Function Sunday- December 17, 2017

The second day programme session was taken by the Professor Sourangshu Bhattacharya, IIT par in three 130 hours consecutive sessions on the topics: (I) Probabilistic Models, Jan Mixture Models (GMMD). Hidden Markov Models (HMM). Maximum Likelihood, (II) Support Vector Machine (SVM). Kernel Methods, and (11) Ensemble Methods: Boosting. Bagging and Random Forests All the topics were explained with the sufficient number of examples and diagrams. Our faculty members also raised their questions on the discussion forum which were satisfactorily answered by him. These sessions were followed by the Quiz session and valedictory function.

♦ **KEY LEARNING:**

Machine learning is a core sub-area of artificial intelligence; it enables computers to get into a mode of self-learning without being explicitly programmed. When exposed to new data, these computer programs are enabled to learn, grow, change, and develop by themselves.

This training programme helped us-

- To get insight of sub areas of machine learning. To get the knowledge of various ML models and algorithms and their comparative analysis.
- To get the detailed discussion on learning steps- pre-processing (normalization and dimensionality reduction), supervised and unsupervised learning, error analysis, and prediction.
- To understand how to automate analytical model building.
- To get integrated end-to-end platform for the automation of the data-to-decision process. To get the mathematical analysis and proofs of various models. In applying machine learning to practical applications and scenarios.

In the last, we, on the behalf of Department of Computer Engineering, want to thank to Dr. O. P. Sharma, Director, PCE and PCE Management to provide us such a great opportunity which need our knowledge on machine learning and its key concepts. We also want to PCE staff members who helped us to make this programme successful.



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Date: 08/12/2017

From,

Dr. Om Prakash Sharma _____ (Head of the Institute's Name)

Director _____ (Designation)

To,

The Project Co-ordinator

Project "T10KT", IIT Kharagpur

Vikramshila Building,

Ground floor, Kalidas Auditorium

IIT Kharagpur, Kharagpur – 721302

Permission letter for Two – Day weekend training programme-Saptahaant Shikshak Prashikshan (SSP) on Introduction to Machine Learning.

This is to certify that the following participants are regular teaching employees of our Institute with one of the following designation :- (Jr. Lecturer/ Lecturer/Sr. Lecturer/Asst. Professor/Associate Professor/ Professor/HOD/ Reader/Vice-Principal/Visiting Faculty/ Teaching Fellow).


SL No.	Name	Designation	Department
1	Dr. Om Prakash Sharma	Professor	Electronics Engineering
2	Prachi Sharma	Assistant Professor	Computer engineering
3	Tunisha Varshney	Assistant Professor	Computer engineering
4	Ankita Jiyani	Assistant Professor	Computer engineering
5	Shalini Puri	Associate Professor	Computer engineering
6	Sunil Gupta	Associate Professor	Computer engineering
7	Manish Sharma	Assistant Professor	Computer engineering
8	Ravindra Kumar Soni	Assistant Professor	Computer engineering
9	Dr. Kshama Raichura	Professor	Computer engineering
10	Manish Kumar Sharma	Assistant Professor	Computer engineering
11	Dr. Sonal Sharma	Professor	Computer engineering
12	Rahul Kumar Rai	Assistant Professor	Computer engineering
13	Geetanjali Singh	Assistant Professor	Computer engineering
14	Atul Kumar Verma	Assistant Professor	Computer engineering
15	Amol Saxena	Associate Professor	Information Technology
16	Loveleen Kumar	Assistant Professor	Information Technology
17	Amit Jha	Assistant Professor	Information Technology
18	Richa Mehra	Assistant Professor	Information Technology
19	Sita Gupta	Assistant Professor	Information Technology
20	Shakshi Mishra	Assistant Professor	Electronics Engineering

The faculty members are allowed to attend the SSP on Introduction to Machine Learning under the National Mission on Education through ICT (MHRD, Govt. of India) on 16th December and 17th December, 2017 in the Poornima College of Engineering (RFID code- 1107) _____ (Remote Center Name with Remote Center ID).

The Institute has no objection to his/ her participation in the workshop. We would make sure that **no official duties** will be delegated which may affect his/ her participation, during workshop.

Thank You,

Institute Head's Signature with Stamp/Department Head with Stamp


Dr. Om Prakash Sharma
B.E., M.E., Ph.D.
Director
Poornima College of Engineering
ISI-6, RUIC O Institutional Area
Sitapura, Jaipur-302 022

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Dr. Mahesh Bunde
B.E., M.E., Ph.D.
Director
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Sitapura, JAIPUR

SCHEDULE:

Time Table for TWO-DAY WEEKEND TRAINING PROGRAMME Saptahaant Shikshak Prashikshan (SSP)

on
Introduction to Machine Learning
16th December to 17th December 2017

Date	Days	Morning				Lunch Break 12.45 PM to 1.45 PM	Afternoon		
Decem ber 16, 2017	Saturday	Inauguration 9.00 AM to 9.30 AM	Introduction to the course, Supervised Learning: classifica tion, regression (PG) 9.30 AM to 11.00 AM	Tea break 11.00 AM to 11.15 AM	Supervised Learning: generalizati on, bias-variance, cross-validation, Unsupervised learning - clustering, dimensionality reduction (PG) 11.15 AM to 12.45 PM		Neural Networks, Algorithms for training - Gradient Descent (GD), Stochastic Gradient Descent (SGD), Back- propagation (PG) 1.45 PM to 3.15 PM	Tea Break 3.15 PM to 3.30 PM	Recurrent Neural Networks (RNN), Convolutional Neural Networks (CNN) (PG) 3.30 PM to 5:00 PM
Decem ber 17, 2017	Sunday	Probabilistic models, Gaussian Mixture Models (GMM), Hidden Markov Models (HMM), Maximum likelihood (SB) 9.30 AM to 11:00 AM			Support Vector Machine (SVM), kernel methods (SB) 11.15 AM to 12.45 PM		Ensemble Methods: Boosting, Bagging, Random Forests (SB) 1.45 PM to 3.15 PM		Quiz 3:30 PM to 4:00 PM

(PG : Professor Pawan Goyal, SB: Professor Sourangshu Bhattacharya)

Note: Every Lecture will include 15 Minutes Discussion at the End

DETAILS OF RESOURCE PERSONS:

- Prof. Sourangshu Bhattacharya,
Department of Computer Science and Engineering,
IIT Kharagpur
Email: sourangshu@cse.iitkgp.ernet.in
- Prof. Pawan Goyal,
Department of Computer Science and Engineering,
IIT Kharagpur
Email: pawang@cse.iitkgp.ernet.in

GLIMPSES OF CONDUCTION:



Dr. Mahesh Bunde
B.E., M.E., Ph.D.
Director
Poornima College of Engineering
ISI-6, FIICO Institutional Area
Shilapura, JAIPUR



♦ LIST OF PARTICIPANTS:

SSP on Introduction to Machine Learning			
RC- ID - 1107		Registration sheet	
S.No.	Participant's ID	Name of the Participants	Signature
1	2111075230	Dr. Om Prakash Sharma	<i>[Signature]</i>
2	2111071977	Dr.Sonal Sharma	<i>[Signature]</i>
3	2111073197	ShaliniPuri	<i>[Signature]</i>
4	2111077464	Sunil Gupta	<i>[Signature]</i>
5	2111075071	AmolSaxena	<i>[Signature]</i>
6		Shikha Gautam	ABSENT
7	2111077700	Prachi Sharma	<i>[Signature]</i>
8	2111071018	TunishaVarshney	<i>[Signature]</i>
9	2111078222	AnkitaJiyani	<i>[Signature]</i>
10	2111076681	Manish Sharma	<i>[Signature]</i>
11	2111077581	Ravindra Kumar Soni	<i>[Signature]</i>
12	2111072158	Manish Kumar Sharma	<i>[Signature]</i>
13		Rahul Kumar Rai	ABSENT
14	2111078530	Geetanjali Singh	<i>[Signature]</i>
15	2111078919	AtulKumarVerma	<i>[Signature]</i>
16	2111074782	Loveleen Kumar	<i>[Signature]</i>
17	2111077162	Amit Jha	<i>[Signature]</i>
18	2111077755	Richa Mehra	<i>[Signature]</i>
19	2111073988	Sita Gupta	<i>[Signature]</i>
20	2111076111	Shakshi Mishra	<i>[Signature]</i>
21	211107106	Shirish Nagar	<i>[Signature]</i>
22	2111071190	Lal Babu Purbey	<i>[Signature]</i>
23	211107663	Mayank Jain	<i>[Signature]</i>
24	2111077603	Amitesh Kumar	<i>[Signature]</i>
25	311107597	Md Nawaid Anjum	<i>[Signature]</i>

Signatures:

Workshop Coordinator :

Remote Centre Coordinator :

[Signature]
MD Nawaid Anjum (H/L)
[Signature]
Dr. Ajay Khuntia (H/L)

[Signature]
16/12/21

Director
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[Signature]
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