



COLLEGE OF ENGINEERING BHUBANESWAR (COEB)
Plot No.1 (A), CNI Complex, Patia, Bhubaneswar – 751024, Odisha, India.
[AFFILIATED TO BPUT, ODISHA]
www.coeb.ac.in

DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING

ADD-ON COURSE : Machine Learning Algorithms for Communication

[Programme: B.Tech, ETC]

Course Objectives:

To impart knowledge to student about recent trends in telecommunication. It provides a brief introduction to the new solutions for communication engineering using machine learning techniques.

SYLLABUS

Total Lecture Hours : 30

MODULE-I:

[10 Hours]

Overview of machine-learning algorithms , their application in wireless communication, supervised learning, unsupervised learning and reinforcement learning (RL), machine learning in wireless channel modeling, (i) propagation scenario classification, (ii) machine-learning-based multipath component (MPC) clustering, (iii) automatic MPC tracking and (iv) deep-learning-based channel modeling.

MODULE-II

[10 Hours]

New types of channel estimators based on machine learning, pilot-aided channel estimators, channel estimators based on deep learning and one blind estimator , challenges and open problems for channel estimation aided by machine-learning theories

MODULE-III

[10 Hours]

Deep learning is incorporated for indoor localization based on channel state information (CSI) with commodity 5GHz Wi-Fi, deep-learning-based algorithm is to leverage bimodal CSI data, the open Jackson queuing network models, vehicular distribution, Model validation, effective in the analysis of system-level performance and dimensioning for vehicular networks.

Course Outcomes: After completion of the course, the students will be able to

- CO1: Explain the basic principles of machine learning and artificial intelligence.
- CO2: Explain the different algorithms involved in machine learning
- CO3: use the algorithms for application in communication engineering.
- CO4: use deep learning technique for application in communication engineering.

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Evaluation Process:

1. Attendance for the course is 75%, which is mandatory.
2. Minimum qualifying marks percentage for the course is 50.
3. Certificate will be issued after successful completion of course and assessment processes.

Learning resources:

Suggested Books:

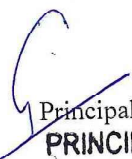
1. Machine Learning And Wireless Communications by Ruisi He, ZIghuo Ding.
2. Machine Learning, Deep Learning and Computational Intelligence for Wireless Communication by E S Gopi
3. machine learning and deep learning techniques in wireless and mob by K. Suganthi, R. Karthik, G. Rajesh, Peter Ho Chiung Ching
4. 5G Wireless Communication System Using Machine Learning by Dr. S. K. Agrawal

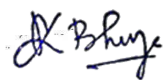
Other Sources:


e-Learning Resources:

1. https://www.youtube.com/watch?v=r4sgKrRL2Ys&list=PL1xHD4vteKYVpaliy295pg6_SY5qznc77

Design and Developed by: Prof. Subrat Kumar Mohanty and Prof. Arpit Sourav Mohapatra


Principal
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H.O.D, ETC Engg.
H.O.D
Dept. of ETC Engg.
COEB, Bhubaneswar



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NOTICE

ADD-ON/CERTIFICATE COURSE

Ref No: COEB/ETC/2018/08

Date: 07/07/2018

It is for the information of all the students of 3rd/5th/7th semester that the classes for the Add-On/Certificate Courses will commence as per the time table given below. The registration process for the course will start from **09/07/2018**. The interested students to enroll themselves for the course are advised to contact the concerned Course Coordinators for the details.

Semester	Course Title	Course Coordinator	Date of Commencement
3rd	PCB Design	Prof. Snehasis Dey	18/07/2018
5th	Advances and challenges in telecommunication	Prof. Lokanath Sarangi	18/07/2018
7th	Machine Learning Algorithms for Communication	Prof. Asit Kumar Satapathy	18/07/2018


The class timing will be from 5.30 pm to 7.30 pm.

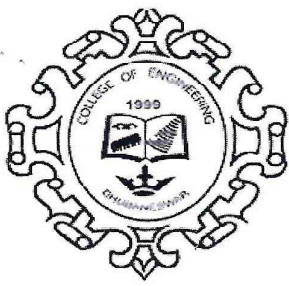
Head of the Department
A.O.S
Dept. of ETC Engg.
COEB, Bhubaneswar

Copy to:

1. Office of the Chairman/ Vice-Chairman for kind information.
2. Office of the Executive Director for kind Information.
3. Office of the Registrar for kind Information.
3. Office of the Principal for kind information.
4. Departmental Notice Board.
5. Guard File

Head of the Department


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ADD-ON COURSE

STUDENT ENROLLMENT SHEET

Name of the Department: Electronics and Telecommunication Engineering	
Course Title: Machine Learning Algorithms for Communication	
Semester: 7 th	Academic Year: 2018-19

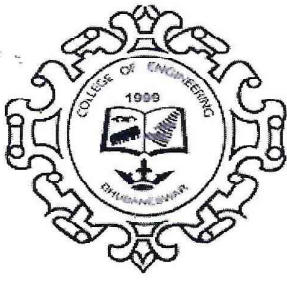
Student's Declaration/Undertaking

1.I do hereby undertake to participate in the above mentioned add on course.

2.I do hereby, promise to abide by the admissible rules and regulations, connecting discipline,attendance,etc. of the department, and also to follow the code of Conduct prescribed for the students of the institute, as in force from time to time.

SL. NO.	Reg. No./ Enrollment No.	NAME OF THE STUDENT	Signature of the student
1	1501219031	BANANI RANI PAUL	Banani Rani Paul
2	1501219032	PRIYA SAHARIA	Priya Saharia
3	1501219033	SALONI SHAW	Saloni Shaw
4	1501219034	DEEPAK	Deepak
5	1501219035	AMAN KUMAR	Aman Kumar
6	1501219036	PRATIK KUMAR PANDEY	Pratik Kumar Pandey
7	1501219037	ROSHAN RATAN MUNDU	Roshan Ratan Mundu
8	1501219038	NITESH KUMAR	Nitesh Kumar
9	1501219145	ABHISHEK KAR	Abhishek Kar
10	1501219146	ARPAN BISWAL	Arpan Biswal
11	1501219147	ASHUTOSH KUMAR	Ashutosh Kumar
12	1501219148	BIPASHA DAS	Bipasha Das
13	1501219149	GARG ARYA	Garg Arya
14	1501219150	LOTUS BAHUK	Lotus Bahuk
15	1501219151	NAVNEET KUMAR	Navneet Kumar
16	1501219152	RAHUL DAS	Rahul Das
17	1501219153	SANGEETA PRADHAN	Sangeeta Pradhan
18	1501219154	SHIV PRAKASH	Shiv Prakash
19	1501219155	SHUBHANKAR RAJ	Shubhankar Raj
20	1501219156	SHYAM KUMAR AGARWAL	Shyam Kumar Agarwal
21	1501219157	SUBHAM KUMAR	Subham Kumar
22	1501219158	SUVAM GAUTAM	Suvam Gautam
23	1501219159	ANKITA SAHAY	Ankita Sahay
24	1501219160	SREETANU NANDY	Sreetanu Nandy
25	1501219383	SUBHASIS MOHANTY	Subhasis Mohanty

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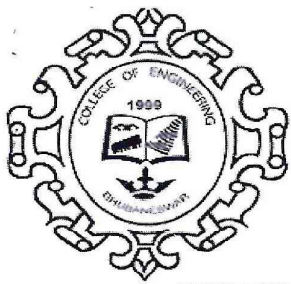
COLLEGE OF ENGINEERING BHUBANESWAR (COEB)

ADD-ON COURSE

STUDENT ENROLLMENT SHEET

26	1501219384	SMRUTIREKHA NAYAK	Smrutirekha Nayak
27	1501219385	SUMAN SWAIN	Suman Swain
Signature of the Course Coordinator			A. Satapatny

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DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING

ADD ON COURSE _____

STUDENT ATTENDANCE SHEET

Programme: B.Tech in ETC

Semester: 7th Academic Year : 2018-19

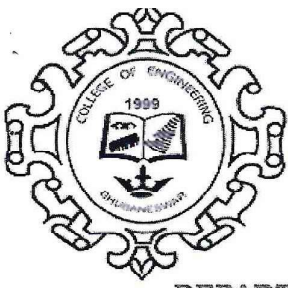
Name of the course: Machine Learning Algorithms for Communication

Course Code (if any):

Duration : 30 hours			Date & Signature of the Student			
SL. NO.	Reg. No./ Enrollment No.	NAME OF THE STUDENT	Date: 18/7/18	Date: 19/7/18	Date: 20/7/18	Date: 23/7/18
1	1501219031	BANANI RANI PAUL	Banani Paul	Banani Paul	Banani Paul	Banani Paul
2	1501219032	PRIYA SAHARIA	Priya Saharia	Priya Saharia	Priya Saharia	Priya Saharia
3	1501219033	SALONI SHAW	Saloni Shaw	Saloni Shaw	Saloni Shaw	Saloni Shaw
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(Signature)

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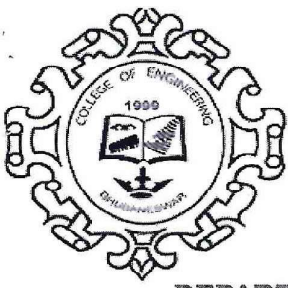
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING

ADD ON COURSE

STUDENT ATTENDANCE SHEET

15	1501219151	NAVNEET KUMAR	Navneet Kumar	Navneet Kumar	Navneet Kumar	Navneet Kumar
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Signature of the Course Coordinator			A. Satapathy	A. Satapathy	A. Satapathy	A. Satapathy


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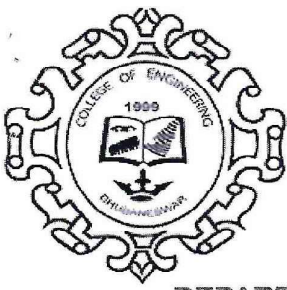
Semester: 7th Academic Year : 2018-19

Name of the course: Machine Learning Algorithms for Communication

Course Code (if any):

Duration : 30 hours		Date & Signature of the Student				
SL. NO.	Reg. No./ Enrollment No.	NAME OF THE STUDENT	Date: 24/7/18	Date: 25/7/18	Date: 26/7/18	Date: 27/7/18
1	1501219031	BANANI RANI PAUL	Banani Paul	Banani Paul	Banani Paul	Banani Paul
2	1501219032	PRIYA SAHARIA	Priya Saharia	Priya Saharia	Priya Saharia	Priya Saharia
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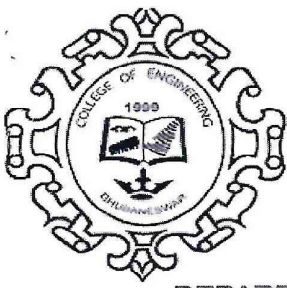
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Signature of the Course Coordinator			A. Satapathy	A. Satapathy	A. Satapathy	A. Satapathy

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STUDENT ATTENDANCE SHEET

Programme: B.Tech in ETC

Semester: 7th Academic Year : 2018-19

Name of the course: Machine Learning Algorithms for Communication

Course Code (if any):

Duration : 30 hours		Date & Signature of the Student				
SL. NO.	Reg. No./ Enrollment No.	NAME OF THE STUDENT	Date: 30/7/18	Date: 31/7/18	Date: 6/8/18	Date: 7/8/18
1	1501219031	BANANI RANI PAUL	<i>Banani Paul</i>	<i>Banani Paul</i>	<i>Banani Paul</i>	<i>Banani Paul</i>
2	1501219032	PRIYA SAHARIA	<i>Priya Saharia</i>	<i>Priya Saharia</i>	<i>Priya Saharia</i>	<i>Priya Saharia</i>
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13	1501219149	GARG ARYA	<i>Garg Arya</i>	<i>Garg Arya</i>	<i>Garg Arya</i>	
14	1501219150	LOTUS BAHUK	<i>Lotus Bahuk</i>	<i>Lotus Bahuk</i>	<i>Lotus Bahuk</i>	<i>Lotus Bahuk</i>

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27	1501219385	SUMAN SWAIN		Suman Swain	Suman Swain	Suman Swain
Signature of the Course Coordinator			A. Satapathy	A. Satapathy	A. Satapathy	A. Satapathy

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DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING

ADD ON COURSE _____

STUDENT ATTENDANCE SHEET

Programme: B.Tech in ETC

Semester: 7th Academic Year : 2018-19

Name of the course: Machine Learning Algorithms for Communication

Course Code (if any):

Duration : 30 hours			Date & Signature of the Student			
SL. NO.	Reg. No./ Enrollment No.	NAME OF THE STUDENT	Date: 8/8/18	Date: 9/8/18	Date: 10/8/18	Date:
1	1501219031	BANANI RANI PAUL	Banani Rani Paul	Banani Rani Paul	Banani Rani Paul	
2	1501219032	PRIYA SAHARIA	Priya Saharia	Priya Saharia	Priya Saharia	
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Koustuv Technical Campus, Plot No. 1 (A), Koustuv Square, Infocity Road
Patia, Bhubaneswar-751024, Odisha, India.

[AFFILIATED TO BPUT, ODISHA]

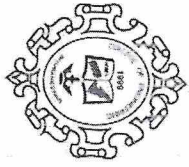
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING

ADD ON COURSE _____

STUDENT ATTENDANCE SHEET

15	1501219151	NAVNEET KUMAR	Navneet Kumar	Navneet kumar	Navneet kumar
16	1501219152	RAHUL DAS	Rahul Das	Rahul Das	Rahul Das
17	1501219153	SANGEETA PRADHAN	Sangeeta Pradhan	Sangeeta Pradhan	Sangeeta Pradhan
18	1501219154	SHIV PRAKASH	Shiv Prakash	Shiv Prakash	Shiv Prakash
19	1501219155	SHUBHANKAR RAJ			
20	1501219156	SHYAM KUMAR AGARWAL	Shyam Kumar Agarwal	Shyam kumar Agarwal	Shyam kumar Agarwal
21	1501219157	SUBHAM KUMAR	Subham Kumar	Subham Kumar	Subham Kumar
22	1501219158	SUVAM GAUTAM	Suvam Gautam	Suvam Gautam	Suvam Gautam
23	1501219159	ANKITA SAHAY		Amrita Sahaya	Amrita Sahaya
24	1501219160	SREETANU NANDY	Sreetanu nandy	Sreetanu nandy	Sreetanu nandy
25	1501219383	SUBHASIS MOHANTY	Subhasis Mohanty	Subhasis Mohanty	Subhasis Mohanty
26	1501219384	SMRUTIREKHA NAYAK	Smrutirekha Nayak	Smrutirekha Nayak	Smrutirekha Nayak
27	1501219385	SUMAN SWAIN	Suman Swain		Suman Swain
Signature of the Course Coordinator			A. Satapathy	A. Satapathy	A. Satapathy

PRINCIPAL
College of Engineering Bhubaneswar



COLLEGE OF ENGINEERING BHUBANESWAR
PLOT NO-1(A), CNI COMPLEX, PATIA, BHUBANESWAR, KHORDHA, ODISHA-751024



Certificate of Completion


This is to certify that Mr./Ms. SUBHAM KUMAR, student of the Department

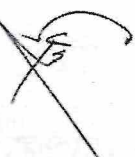
of Electronics and Telecommunications Engg semester Seventh bearing registration number 1501219157

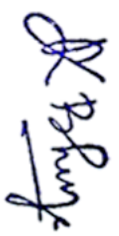
has successfully completed the ADD-ON Course titled Machine Learning Algorithms for Communication

conducted at College of Engineering Bhubaneswar in the academic year 2018-19

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Course-Coordinator


Principal


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Certificate of Completion

This is to certify that Mr./Ms. SUVAM GAUTAM, student of the Department

of Electronics and Telecommunications Engg. semester Seventh bearing registration number 1501219158

has successfully completed the ADD-ON Course titled Machine Learning Algorithms for Communication

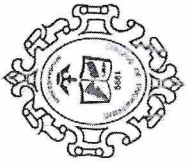
conducted at College of Engineering Bhubaneswar in the academic year 2018-19

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Course-Coordinator

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Certificate of Completion

This is to certify that Mr./Ms. SREETANU NANDY, student of the Department


of Electronics and Telecommunications Engg semester Seventh bearing registration number 1501219160

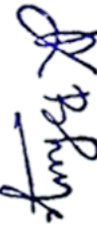
has successfully completed the ADD-ON Course titled Machine Learning Algorithms for Communication

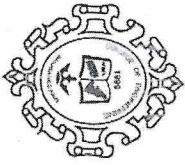
conducted at College of Engineering Bhubaneswar in the academic year 2018-19

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Certificate of Completion

This is to certify that Mr./Ms.

SUBHASIS MOHANTY

, student of the Department

of Electronics and Telecommunications Engg semester Seventh bearing registration number 1501219383

has successfully completed the ADD-ON Course titled Machine Learning Algorithms for Communication

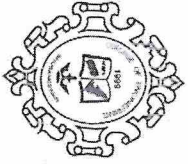
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Course-Coordinator

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Certificate of Completion


This is to certify that Mr./Ms. SMRUTIREKHA NAYAK student of the Department


of Electronics and Telecommunications Engg semester Seventh bearing registration number 1501219384

has successfully completed the ADD-ON Course titled Machine Learning Algorithms for Communication

conducted at College of Engineering Bhubaneswar in the academic year 2018-19

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