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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Date:12/8/2020

CIRCULAR

This is to inform that there will be a meeting of Academic committee members for analyzing curriculum syllabus of academic year 2020-21.the meeting is scheduled on 14/8/2020 at 11.00AM in the HODs chamber.

Sl No.	Faculty Name	Designation	Signature
1.	Dr. KAMALAKSHI NAGANNA	HOD	
2.	Dr. GURURAJ MURTUGUDDE	Professor	
3.	Dr. PRAVEEN KUMAR K V	Professor	
4.	Prof. CHAITHRA	Associate Professor	
5.	Prof. LATHA A	Assistant Professor	
6.	Prof. MADHUSHREE	Assistant Professor	

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HOD
Professor & Head of the Dep
Computer Science Engi
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Bangalore-57

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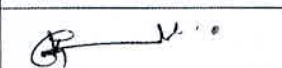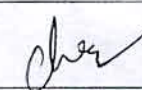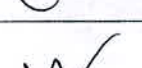# DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Date: 14-08-2020

MINUTES OF MEETING

With reference to circular dated on 12/08/2020, the academic committee members assembled in HODs chamber for addressing the following agenda.

Agenda:

- Reviewing the analysis of department curriculum syllabus of Academic Year 2020-2021.
- Reviewing the feedback analysis of various stake holders of the academic year 2019-2020.
- Identifying the gaps in the syllabus
- Action to be taken for the identified gaps.

During the meeting the following members were present

Sl No.	Faculty Name	Designation	Signature
1.	Dr. KAMALAKSHI NAGANNA	HOD	
2.	Dr. GURURAJ MURTUGUDDE	Professor	
3.	Dr. PRAVEEN KUMAR K V	Professor	
4.	Prof. CHAITHRA	Associate Professor	
5.	Prof. LATHA A	Assistant Professor	
6.	Prof. MADHUSHREE	Assistant Professor	

The following points were discussed in the meeting

1. The committee members reviewed the analysis of department curriculum syllabus.
2. The committee members discussed about the feedback analysis of department curriculum syllabus.
3. The members identified the gaps based on the analysis.
4. The following actions were taken for the gaps that are identified.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

SL.NO	SEM	Course Title	Identified Gap
1	VI-A/B	Python Application Programming (17CS664)	Lack of practical implementation of Machine Learning algorithms.
2	VI-A/B	CRYPTOGRAPHY ,NETWORK SECURITY AND CYBER LAW (17CS61)	Lack of practical implementation of mobile application.

Action Taken:

Based on the feedback obtained from Students, Faculties, Alumni and employer and analysis of syllabus by department academic committee members, it was decided to conduct certification courses on "MACHINE LEARNING (SGCS74)" and " MOBILE APPLICATION DEVELOPMENT (SGCS64)" to overcome the gaps identified in the curriculum/syllabus.

HOD, CSE

Professor & Head of the Departm
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FACULTY FEEDBACK ON CURRICULUM

This questionnaire is intended to collect information relating to your satisfaction towards the curriculum, teaching, learning and evaluation. The information provided by you will be kept confidential and will be used as important feedback for quality improvement of the program of studies/institution.

Academic Year	2019-20
Branch	CSE
Name of the Faculty	Shankar Rana
Designation	AP
Subject/Sub. Code	Python Programming ACS664

Rate the curriculum/syllabus on the following Points

SL NO	Statements	Excellent	Very good	Good	Average	Below Average
		5	4	3	2	1
1	Do you feel that the curriculum is defined in a way to clarify your teaching goals and what you expect your students to learn?		✓			
2	Is the curriculum suffcient to bridge the gap between industry standards /current global scenarios and academics?		✓			
3	Is the timely coverage of curriculum possible in the mentioned number of hours?					
4	Suffcient reference material and books are available for the topics mentioned in the curriculum?	✓				
5	The evaluation methods mentioned in the curriculum are suffcient for providing proper assessment?		✓			
6	Curriculum is suitable to the course		✓			
7	The curriculum/course of this subject increased my knowledge and perspective in the subject area		✓			

Suggestions: Machine learning Concepts Can be Introduced

Signature

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STUDENTS FEEDBACK ON CURRICULUM

This questionnaire is to collect information relating to your satisfaction towards curriculum for creating conducive atmosphere for teaching and learning. The information provided by you will be kept confidential and will be used as important feedback for quality improvement of the program of studies/institution.

Academic Year	2019-20
Branch	CSE
Name of the Student	Pooja A S
USN	1SG17CS057

Rate the curriculum/syllabus on the following Points

SL NO	Statements	Excellent 5	Very good 4	Good 3	Average 2	Below Average 1
1	How do you rate the syllabus of the courses that you have studied in relation to the competencies expected out of the course?		✓			
2	How do you rate the allocation of the credits to the courses?		✓			
3	Relevance for implementation in projects		✓			
4	How do you rate the electives offered in relation to the technological advancements?					
5	How do rate the evaluation scheme designed for each of the course?	✓				
6	How do you rate the percentage of courses having LAB components?		✓			
7	Curriculum is sufficient to make you analyze the engineering problems and its suitable solution	✓				
8	Suggestions (if any)	Need ML basics.				

Signature: Pooja A S

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Date: 17-08-2020

To

IQAC Coordinator

Sapthagiri College of Engineering

Bengaluru-560 057

Respected Sir/Madam,

Subject: Requisition for conduction of certification courses and approval from Governing Council.

With respect to the Academic committee members meeting held for analyzing department curriculum/syllabus for the academic year 2020-21. The committee members identified few gaps after analyzing the syllabus and feedback from the stakeholders. To bridge the gaps identified in the curriculum, the committee members decided to conduct certification courses on "MACHINE LEARNING (SGCS74)" from 16th December 2020 to 21th December 2020 and "MOBILE APPLICATION DEVELOPMENT (SGCS64)" from 5th Apr 2021 to 9th Apr 2021, for the academic year 2020-21. So, I request you to forward and get the approval from the governing council for the same.

Thanking You,

Enclosure: Budget Proposal.

IQAC - Co-ordinator
Sapthagiri College of Engineering
Bengaluru - 560 057.

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HOD

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Department of Computer Science & Engineering

Date: 24-11-2020

CIRCULAR

This is to inform that the following Academic Committee members are requested to attend the meeting on 25/11/2020 at 11.30AM in the HODs chamber to decide the syllabus and the lesson plan for the certification program on "MACHINE LEARNING (SGCS74)".

Sl No.	Faculty Name	Designation	Signature
1.	Dr. KAMALAKSHI NAGANNA	HOD	
2.	Dr. GURURAJ MURTUGUDDE	Professor	
3.	Dr. PRAVEEN KUMAR K V	Professor	
4.	Prof. CHAITHRA	Associate Professor	
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Department of Computer Science & Engineering

26-11-2020

Minutes of Meeting

A meeting was conducted on 25/11/2020 in CSE HOD's Chamber to discuss and approve the syllabus & schedule of the 5 days Certification Course for VII semester CSE Students.

- **Course Title:** "MACHINE LEARNING (SGCS74)".

- **Resource Personnel:** Faculties of CSE.

- **Course Duration & Date:** 5 Days from 16/12/2020 to 21/12/2020.

Syllabus & Schedule of the certification program

DATES	SESSION 1 (8:30 – 12:30)	SESSION 2 (1:30 – 4:30)
16/12/20 WEDNESDAY	Introduction to Python	Introduction to Machine Learning and Job Opportunities
17/12/20 THURSDAY	Dimensionality Reduction, PCA, LDA & Kernel PCA Algorithms	Linear regression, Logistic regression algorithms
18/12/20 FRIDAY	KNN, Random Forest Algorithms	Navie Bias, Clustering concept with K Means Algorithms
19/12/20 SATURDAY	ADHOC Network	Application of Machine Learning
21/12/20 MONDAY	Artificial Intelligence	Quiz with Feedback and Certificate

The following members were present in the meeting and the syllabus and lesson plan for the certification program has been decided.

Sl No.	Faculty Name	Designation	Signature
1.	Dr. KAMALAKSHI NAGANNA	HOD	
2.	Dr. GURURAJ MURTUGUDDE	Professor	
3.	Dr. PRAVEEN KUMAR K V	Professor	
4.	Prof. CHAITHRA	Associate Professor	
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Department of Computer Science & Engineering

CIRCULAR

The department of Computer Science and Engineering is Conducting 5 days Certification Course on **MACHINE LEARNING (SGCS74)** for 7th semester students from 16th Dec 2020 to 21th Dec 2020.

Hence hereby informing all seventh semester students to attend the Certification Program Compulsorily.

Co-ordinator

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Department of Computer Science & Engineering

STUDENTS ENROLLED IN 5 DAYS CERTIFICATION COURSE ON "MACHINE LEARNING (SGCS74)"

Sl. No	USN	Name of the Students
1.	1SG16CS121	VINEETHA RAVI KUMAR
2.	1SG17CS001	AASIM INAMDAR
3.	1SG17CS003	ADNAN ANJUM
4.	1SG17CS004	AFREEN.K
5.	1SG17CS005	AISHWARYA P
6.	1SG17CS006	AKASH KUMAR MAHAPATRA
7.	1SG17CS007	AKHILESH R MADHYASTHA
8.	1SG17CS008	AMAN PANDEY
9.	1SG17CS009	AMAN VERMA
10.	1SG17CS010	AMIT N HEBBI
11.	1SG17CS011	ANANTHA KRISHNA
12.	1SG17CS012	ARJUN SINGH
13.	1SG17CS013	ARUN KUMAR S V
14.	1SG17CS014	AYAN BISWAS
15.	1SG17CS015	B PRASHANTH
16.	1SG17CS016	BHAGYASHREE B YARGAL
17.	1SG17CS017	BHARATH KUMAR R S
18.	1SG17CS018	BHARATHI J

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19.	1SG17CS019	CHAITHANYA S
20.	1SG17CS020	CHANDAN PATIGE
21.	1SG17CS021	CHANDANA M
22.	1SG17CS024	DEEPA R M
23.	1SG17CS025	DHANASHREE KULKARNI
24.	1SG17CS026	DILIP D M
25.	1SG17CS028	DYUTHISHREE
26.	1SG17CS029	FIRDOSE FATHIMA
27.	1SG17CS030	GANAVI R
28.	1SG17CS031	GANGA SAGAR H L
29.	1SG17CS032	GAURAV KUMAR
30.	1SG17CS033	GAYATHRI S
31.	1SG17CS034	HARIPRIYA R K
32.	1SG17CS035	HARSHA H
33.	1SG17CS036	ISHA BHAN
34.	1SG17CS037	JOVIN DSOUZA
35.	1SG17CS038	K KAVITHA
36.	1SG17CS039	KARN KUMAR
37.	1SG17CS040	KAVYA M HEGDE
38.	1SG17CS041	KAVYA S
39.	1SG17CS042	KHUSHBOO JAGWANI
40.	1SG17CS043	KRUTHI RAMESH

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41.	1SG17CS044	KUNAL P SANGURMATH
42.	1SG17CS045	LIKHITHA S R
43.	1SG17CS046	LOHITH B
44.	1SG17CS047	MAHIKA SINHA
45.	1SG17CS048	MANASA G
46.	1SG17CS049	MANAV PRADHAN
47.	1SG17CS051	MILIND MAHARANA
48.	1SG17CS052	NAINKAMALJEET SINGH
49.	1SG17CS053	NAKSHA MUTHAPPA M
50.	1SG17CS068	HARSHITHA R K
51.	1SG17CS117	ABHISHEK KUMAR SHARMA
52.	1SG17CS116	C. MURALI GOPAL
53.	1SG17CS109	GAURI SHUKLA
54.	1SG17CS112	PALLAVI .R
55.	1SG17CS114	PRACHI
56.	1SG17CS120	SUKANYA N
57.	1SG18CS400	ARPITHA V
58.	1SG18CS402	DHANALAKSHMI
59.	1SG16CS038	HARSHITHA P
60.	1SG16CS093	SANJAY KUMAR
61.	1SG16CS412	RAKSHITHA S N

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62.	1SG17CS054	
63.	1SG17CS055	NIVEDITHA M P
64.	1SG17CS056	ONKARAMURTHY S K
65.	1SG17CS057	P AFREEN
66.	1SG17CS058	POOJA A S
67.	1SG17CS059	POOJA K R
68.	1SG17CS060	PRAJWAL SURESH
69.	1SG17CS061	PRAJWAL SHIVAKUMAR
70.	1SG17CS062	PRARTHANA NAIK
71.	1SG17CS063	RAHUL VERMA
72.	1SG17CS064	RAJ RANVEER
73.	1SG17CS065	RAJAT YADAV
74.	1SG17CS066	RASHI MAZUMDAR
75.	1SG17CS067	RISHIKESH SINGH
76.	1SG17CS069	RITIKA PANWAR
77.	1SG17CS070	SACHIN
78.	1SG17CS071	SACHIN B R
79.	1SG17CS072	SAEED ANWAR
80.	1SG17CS073	SAHANA R YADAV
81.	1SG17CS074	SAHANA V
82.	1SG17CS075	SAKSHI
83.	1SG17CS076	SALMAN KHAN
		SARA KHATOON

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84.	1SG17CS077	SHALINI T S
85.	1SG17CS078	SHARAN S
86.	1SG17CS079	SHASHIDHAR N N
87.	1SG17CS080	SHRUTI SINGH
88.	1SG17CS082	SHWETA SINGH
89.	1SG17CS083	SIDDHARTH SINGH
90.	1SG17CS084	SIDHANT KUMAR
91.	1SG17CS086	SOUNDARYA C
92.	1SG17CS087	SOWMYA R
93.	1SG17CS088	SPOORTHI IYENGAR
94.	1SG17CS089	SPOORTHY I
95.	1SG17CS090	SREEPRIYA A
96.	1SG17CS091	SUDHAKAR MISHRA
97.	1SG17CS092	SUKANYA C
98.	1SG17CS094	SWATHI
99.	1SG17CS095	UJJWAL KUMAR
100.	1SG17CS096	VAISHALI SONI
101.	1SG17CS098	VARSHA C M
102.	1SG17CS099	VIKAS SHARMA
103.	1SG17CS100	VINAYAKA K M
104.	1SG17CS101	VIVEK MATHEW
105.	1SG17CS103	VRUSHANK DHEERENDRA RAO

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106.	1SG17CS104	YASHASWINI C
107.	1SG17CS105	YASHASWI M
108.	1SG17CS113	AKARSH SINGH
109.	1SG17CS107	DHRUVA K
110.	1SG17CS111	POOJITHA U
111.	1SG17CS115	PRIYA KUMARI
112.	1SG17CS108	SAKSHI
113.	1SG17CS110	TEJASWINI
114.	1SG17CS118	MEGHANA N
115.	1SG17CS119	RAMYA M
116.	1SG18CS403	LAVANYA R
117.	1SG18CS404	RASHMITHA S

Co-ordinator

HOD

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Department of Computer Science & Engineering

5 DAYS CERTIFICATION COURSE ON "MACHINE LEARNING (SGCS74)"

ATTENDANCE

Sl. No.	USN	NAME	16/11/20		17/11/20		18/11/20		19/11/20		21/11/20		Test
			MS	AS	MS	AS	MS	AS	MS	AS	MS	AS	
1.	1SG16CS121	VINEETHA RAVI KUMAR	1	2	3	3	4	5	6	7	8	9	P
2.	1SG17CS001	AASIM INAMDAR	1	2	3	4	5	6	7	8	9	10	P
3.	1SG17CS003	ADNAN ANJUM	1	2	3	4	5	6	7	8	9	10	P
4.	1SG17CS004	AFREEN.K	1	2	3	4	5	6	7	8	9	10	P
5.	1SG17CS005	AISHWARYA P	1	2	3	4	5	6	7	8	9	10	P
6.	1SG17CS006	AKASH KUMAR MAHAPATRA	1	2	3	4	5	6	7	8	9	10	P
7.	1SG17CS007	AKHILESH R MADHYASTHA	1	2	3	4	5	6	7	8	9	10	P
8.	1SG17CS008	AMAN PANDEY	1	2	3	4	5	6	7	7	8	9	P
9.	1SG17CS009	AMAN VERMA	1	2	3	4	5	6	7	8	9	10	D
10.	1SG17CS010	AMIT N HEBBI	1	2	3	4	5	6	7	8	9	10	P
11.	1SG17CS011	ANANTHA KRISHNA	1	2	3	4	5	6	7	8	9	10	P
12.	1SG17CS012	ARJUN SINGH	1	2	3	4	5	6	7	8	9	10	P
13.	1SG17CS013	ARUN KUMAR S V	1	2	3	4	5	6	7	8	9	10	P
14.	1SG17CS014	AYAN BISWAS	1	2	3	4	5	6	7	8	9	10	P
15.	1SG17CS015	B PRASHANTH	1	2	3	4	5	6	7	8	9	10	P
16.	1SG17CS016	BHAGYASHREE B YARGAL	1	2	3	4	5	6	7	8	9	10	P
17.	1SG17CS017	BHARATH KUMAR R S	1	2	3	4	5	6	7	8	9	10	P

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18.	1SG17CS018	BHARATHI J	1	2	3	4	5	6	7	8	9	10	P
19.	1SG17CS019	CHAITHANYA S	1	2	3	4	5	6	7	8	9	10	P
20.	1SG17CS020	CHANDAN PATIGE	1	2	3	4	5	6	7	8	9	10	P
21.	1SG17CS021	CHANDANA M	1	2	3	4	5	6	7	8	9	10	P
22.	1SG17CS024	DEEPA R M	1	2	3	4	5	6	7	8	9	10	P
23.	1SG17CS025	DHANASHREE KULKARNI	1	2	3	4	5	6	7	8	9	10	P
24.	1SG17CS026	DILIP D M	1	2	3	4	5	6	7	8	9	10	P
25.	1SG17CS028	DYUTHISHREE	1	2	3	4	5	6	7	8	9	10	P
26.	1SG17CS029	FIRDOSE FATHIMA	1	2	3	4	5	6	7	8	9	10	P
27.	1SG17CS030	GANAVI R	1	2	3	4	5	6	7	8	9	10	P
28.	1SG17CS031	GANGA SAGAR H L	1	2	3	4	4	5	6	7	8	9	P
29.	1SG17CS032	GAURAV KUMAR	1	2	3	4	5	6	7	8	9	10	P
30.	1SG17CS033	GAYATHRI S	1	2	3	4	5	6	7	8	9	10	P
31.	1SG17CS034	HARIPRIYA R K	1	2	3	4	5	6	7	8	9	10	P
32.	1SG17CS035	HARSHA H	1	2	3	4	5	6	7	8	9	10	P
33.	1SG17CS036	ISHA BHAN	1	2	3	4	5	6	7	8	9	10	P
34.	1SG17CS037	JOVIN DSOUZA	1	2	3	4	5	6	7	8	9	10	P
35.	1SG17CS038	K KAVITHA	1	2	3	4	5	6	7	8	9	10	P
36.	1SG17CS039	KARN KUMAR	1	2	3	4	5	6	7	8	9	10	P
37.	1SG17CS040	KAVYA M HEGDE	1	2	3	4	5	6	7	8	9	10	P
38.	1SG17CS041	KAVYA S	1	2	3	4	5	6	7	8	9	10	P
39.	1SG17CS042	KHUSHBOO JAGWANI	1	2	3	4	5	6	7	8	9	10	P
40.	1SG17CS043	KRUTHI RAMESH	1	2	3	4	5	6	7	8	9	10	P

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41.	1SG17CS044	KUNAL P SANGURMATH	1	2	3	4	5	6	7	8	9	10	P
42.	1SG17CS045	LIKHITHA S R	1	2	3	4	5	6	7	8	8	9	P	
43.	1SG17CS046	LOHITH B	1	2	3	4	5	6	7	8	9	10	P	
44.	1SG17CS047	MAHIKA SINHA	1	2	3	4	5	6	7	8	9	10	P	
45.	1SG17CS048	MANASA G	1	2	3	4	5	6	7	8	9	10	P	
46.	1SG17CS049	MANAV PRADHAN	1	2	3	4	5	6	7	8	9	10	?	
47.	1SG17CS051	MILIND MAHARANA	1	2	3	4	5	6	7	8	9	10	P	
48.	1SG17CS052	NAINKAMALJEET SINGH	1	2	3	4	5	6	7	8	9	10	P	
49.	1SG17CS053	NAKSHA MUTHAPPA M	1	2	3	4	5	6	7	8	9	10	P	
50.	1SG17CS068	HARSHITHA R K	1	2	3	4	5	6	7	8	9	10	P	
51.	1SG17CS117	ABHISHEK KUMAR SHARMA	1	2	3	4	5	6	7	8	9	10	P	
52.	1SG17CS116	C. MURALI GOPAL	1	2	3	4	5	6	7	8	9	10	P	
53.	1SG17CS109	GAURI SHUKLA	1	2	3	4	5	6	7	8	9	10	P	
54.	1SG17CS112	PALLAVI .R	1	2	3	4	5	6	7	8	9	10	-	
55.	1SG17CS114	PRACHI	1	2	3	4	5	6	7	8	9	10	P	
56.	1SG17CS120	SUKANYA N	1	2	3	4	5	6	6	7	8	9	P	
57.	1SG18CS400	ARPITHA V	1	2	3	4	5	6	7	8	9	10	P	
58.	1SG18CS402	DHANALAKSHMI	1	2	3	4	5	6	7	8	9	10	P	
59.	1SG16CS038	HARSHITHA P	1	2	3	4	5	6	7	8	9	10	P	
60.	1SG16CS093	SANJAY KUMAR	1	2	3	4	5	6	7	8	9	10	P	
61.	1SG16CS412	RAKSHITHA S N	1	2	3	4	5	6	7	8	9	10	P	
62.	1SG17CS054	NIVEDITHA M P	1	2	3	4	5	6	7	8	9	10	P	

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No.	USN	Name											
63.	1SG17CS055	ONKARAMURTHY S K	1	2	3	4	5	6	7	8	9	10	P
64.	1SG17CS056	P AFREEN	1	2	3	4	5	6	7	8	9	10	P
65.	1SG17CS057	POOJA A S	1	2	3	3	4	5	6	7	8	9	10
66.	1SG17CS058	POOJA K R	1	2	3	4	5	6	7	8	9	10	P
67.	1SG17CS059	PRAJWAL SURESH	1	2	3	4	5	6	7	8	9	10	P
68.	1SG17CS060	PRAJWAL SHIVAKUMAR	1	2	3	4	5	6	7	8	9	10	P
69.	1SG17CS061	PRARTHANA NAIK	1	2	3	4	5	6	7	8	9	10	P
70.	1SG17CS062	RAHUL VERMA	1	2	3	4	5	6	7	8	9	10	P
71.	1SG17CS063	RAJ RANVEER	1	2	3	4	5	6	7	8	9	10	P
72.	1SG17CS064	RAJAT YADAV	1	2	3	4	5	6	7	8	9	10	P
73.	1SG17CS065	RASHI MAZUMDAR	1	2	3	4	5	6	7	8	9	10	P
74.	1SG17CS066	RISHIKESH SINGH	1	2	3	4	5	6	7	8	9	10	P
75.	1SG17CS067	RITIKA PANWAR	1	2	3	4	5	6	7	8	9	10	P
76.	1SG17CS069	SACHIN	1	2	3	4	5	6	7	8	9	10	P
77.	1SG17CS070	SACHIN B R	1	2	3	4	5	6	7	8	9	10	n
78.	1SG17CS071	SAEED ANWAR	1	2	3	4	5	6	7	8	9	10	P
79.	1SG17CS072	SAHANA R YADAV	1	2	3	4	5	6	7	8	9	10	P
80.	1SG17CS073	SAHANA V	1	2	3	4	5	6	7	8	9	10	P
81.	1SG17CS074	SAKSHI	1	2	3	4	5	6	7	8	9	10	P
82.	1SG17CS075	SALMAN KHAN	1	2	3	4	5	6	7	8	9	10	P
83.	1SG17CS076	SARA KHATOON	1	2	3	4	5	6	7	8	9	10	P
84.	1SG17CS077	SHALINI T S	1	2	3	4	5	6	7	8	9	10	P
85.	1SG17CS078	SHARAN S	1	2	3	4	5	6	7	8	9	10	P

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No.	USN	Name											
86.	1SG17CS079	SHASHIDHAR N N	1	2	3	4	5	6	7	8	9	10	P
87.	1SG17CS080	SHRUTI SINGH	1	2	3	4	5	6	7	8	9	10	P
88.	1SG17CS082	SHWETA SINGH	1	2	3	4	5	6	7	8	9	10	P
89.	1SG17CS083	SIDDHARTH SINGH	1	2	3	4	5	6	7	8	9	10	P
90.	1SG17CS084	SIDHANT KUMAR	1	2	3	4	5	6	7	8	9	10	P
91.	1SG17CS086	SOUNDARYA C	1	2	3	4	5	6	7	8	9	10	P
92.	1SG17CS087	SOWMYA R	1	2	3	4	5	6	7	8	9	10	1
93.	1SG17CS088	SPOORTHI IYENGAR	1	2	3	4	5	6	7	8	9	10	P
94.	1SG17CS089	SPOORTHY I	1	2	3	4	5	6	7	8	9	10	P
95.	1SG17CS090	SREEPRIYA A	1	2	3	4	5	6	7	8	9	10	P
96.	1SG17CS091	SUDHAKAR MISHRA	1	2	3	4	5	6	7	8	9	10	P
97.	1SG17CS092	SUKANYA C	1	2	3	4	5	6	7	8	9	10	P
98.	1SG17CS094	SWATHI	1	2	3	4	5	6	7	8	9	10	P
99.	1SG17CS095	UJJWAL KUMAR	1	2	3	4	5	6	7	8	9	10	P
100.	1SG17CS096	VAISHALI SONI	1	2	3	4	5	6	7	8	9	10	P
101.	1SG17CS098	VARSHA C M	1	2	3	4	5	6	7	8	9	10	P
102.	1SG17CS099	VIKAS SHARMA	1	2	3	4	5	6	7	8	9	10	P
103.	1SG17CS100	VINAYAKA K M	1	2	3	4	5	6	7	8	9	10	P
104.	1SG17CS101	VIVEK MATHEW	1	2	3	4	5	6	7	8	9	10	P
105.	1SG17CS103	VRUSHANK DHEERENDRA RAO	1	2	3	4	5	6	7	8	9	10	P
106.	1SG17CS104	YASHASWINI C	1	2	3	4	5	6	6	7	8	9	P
107.	1SG17CS105	YASHASWI M	1	2	3	4	5	6	7	8	9	10	P
108.	1SG17CS113	AKARSH SINGH	1	2	3	4	5	6	7	8	9	10	P

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109.	1SG17CS107	DHRUVA K	1	2	3	4	5	6	7	8	9	10	P
110.	1SG17CS111	POOJITHA U	1	2	3	4	5	6	7	8	9	10	P
111.	1SG17CS115	PRIYA KUMARI	1	2	3	4	5	6	7	8	9	10	P
112.	1SG17CS108	SAKSHI	1	2	3	4	5	6	7	8	9	10	P
113.	1SG17CS110	TEJASWINI	1	2	3	4	5	6	7	8	9	10	P
114.	1SG17CS118	MEGHANA N	1	2	3	4	5	6	7	8	9	10	P
115.	1SG17CS119	RAMYA M	1	2	3	4	5	6	7	8	9	10	
116.	1SG18CS403	LAVANYA R	1	2	3	4	5	6	7	8	9	10	P
117.	1SG18CS404	RASHMITHA S	1	2	3	4	5	6	7	8	9	10	P

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5 DAYS CERTIFICATION COURSE ON "MACHINE LEARNING (SGCS74)"

TEST TIME TABLE

SL.NO	DATE / DAY	TIMINGS
1.	21/12/2020 MONDAY	3:00PM- 4:30PM

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5 DAYS CERTIFICATION COURSE ON "MACHINE LEARNING (SGCS74)"

QUESTION PAPER

1) Which of the following statement is true in following case?

A) Feature F1 is an example of nominal variable.

B) Feature F1 is an example of ordinal variable.

C) It doesn't belong to any of the above category.

D) Both of these

2) Which of the following is an example of a deterministic algorithm?

A) PCA

B) K-Means

C) None of the above

3) [True or False] A Pearson correlation between two variables is zero but, still their values can still be related to each other.

A) TRUE

B) FALSE

4) Which of the following statement(s) is / are true for Gradient Decent (GD) and Stochastic Gradient Decent (SGD)?

1. In GD and SGD, you update a set of parameters in an iterative manner to minimize the error function.
2. In SGD, you have to run through all the samples in your training set for a single update of a parameter in each iteration.
3. In GD, you either use the entire data or a subset of training data to update a parameter in each iteration.

A) Only 1

B) Only 2

C) Only 3

D) 1 and 2

E) 2 and 3

F) 1,2 and 3

5) Which of the following hyper parameter(s), when increased may cause random forest to over fit the data?

1. Number of Trees
2. Depth of Tree
3. Learning Rate

A) Only 1

B) Only 2

C) Only 3

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D) 1 and 2

E) 2 and 3

F) 1,2 and 3

6) Imagine, you are working with "Analytics Vidhya" and you want to develop a machine learning algorithm which predicts the number of views on the articles.

Your analysis is based on features like author name, number of articles written by the same author on Analytics Vidhya in past and a few other features. Which of the following evaluation metric would you choose in that case?

1. Mean Square Error
2. Accuracy
3. F1 Score

A) Only 1

B) Only 2

C) Only 3

D) 1 and 3

E) 2 and 3

F) 1 and 2

7) Given below are three images (1,2,3). Which of the following option is correct for these images?

A)

D)

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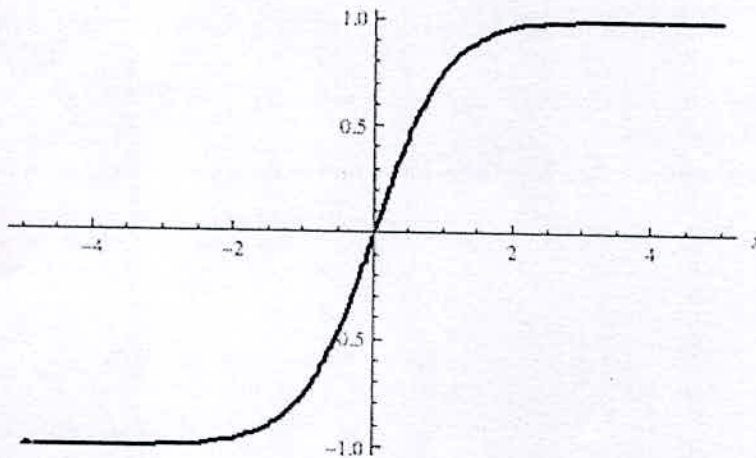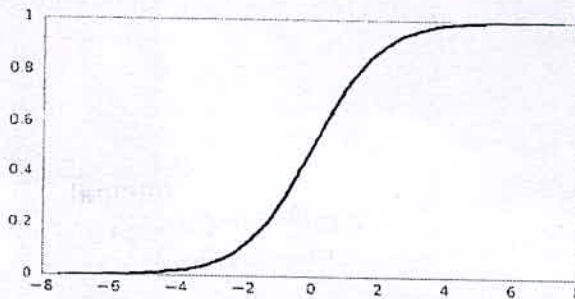
Department of Computer Science & Engineering
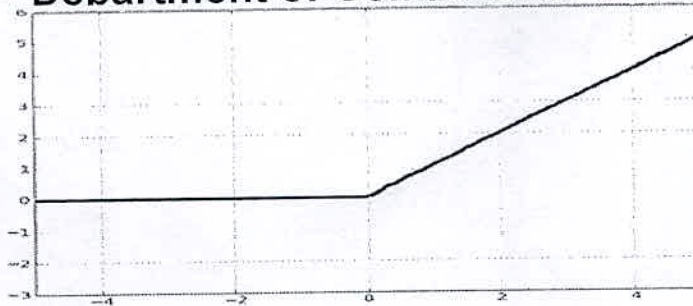
C)

A) 1 is tanh, 2 is ReLU and 3 is SIGMOID activation functions.

B) 1 is SIGMOID, 2 is ReLU and 3 is tanh activation functions.

C) 1 is ReLU, 2 is tanh and 3 is SIGMOID activation functions.

D) 1 is tanh, 2 is SIGMOID and 3 is ReLU activation functions.

8) **Below are the 8 actual values of target variable in the train file.**

[0,0,0,1,1,1,1,1]

What is the entropy of the target variable?

A) -(5/8 log(5/8) + 3/8 log(3/8))

B) 5/8 log(5/8) + 3/8 log(3/8)

C) 3/8 log(5/8) + 5/8 log(3/8)

D) 5/8 log(3/8) – 3/8 log(5/8)

9) **Let's say, you are working with categorical feature(s) and you have not looked at the distribution of the categorical variable in the test data.**

You want to apply one hot encoding (OHE) on the categorical feature(s). What challenges you may face if you have applied OHE on a categorical variable of train dataset?

A) All categories of categorical variable are not present in the test dataset.

B) Frequency distribution of categories is different in train as compared to the test dataset.

C) Train and Test always have same distribution.

D) Both A and B

E) None of these

10) **Skip gram model is one of the best models used in Word2vec algorithm for words embedding. Which one of the following models depict the skip gram model?**

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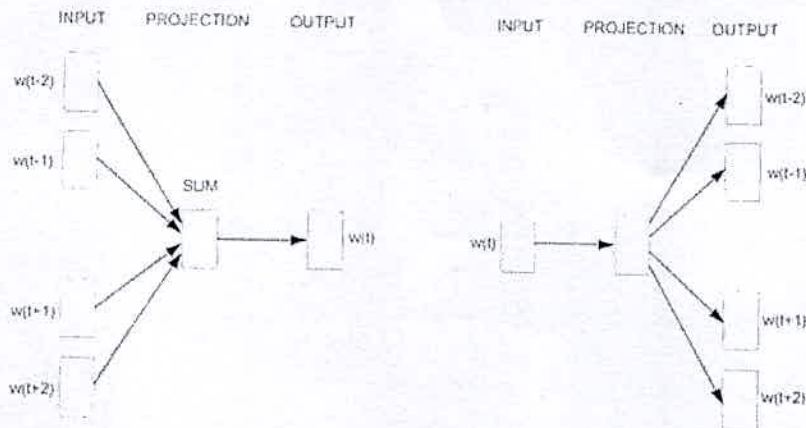
Model A   Model B

A) A

B) B

C) Both A and B

D) None of these

11) Let's say, you are using activation function X in hidden layers of neural network. At a particular neuron for any given input, you get the output as "-0.0001". Which of the following activation function could X represent?

A) ReLU

B) tanh

C) SIGMOID

D) None of these

12) [True or False] LogLoss evaluation metric can have negative values.

A) TRUE

B) FALSE

13) Which of the following statements is/are true about "Type-1" and "Type-2" errors?

1. Type1 is known as false positive and Type2 is known as false negative.
2. Type1 is known as false negative and Type2 is known as false positive.
3. Type1 error occurs when we reject a null hypothesis when it is actually true.

A) Only 1

B) Only 2

C) Only 3

D) 1 and 2

E) 1 and 3

F) 2 and 3

14) Which of the following is/are one of the important step(s) to pre-process the text in NLP based projects?

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1. Stemming
2. Stop word removal
3. Object Standardization

A) 1 and 2

B) 1 and 3

C) 2 and 3

D) 1,2 and 3

15) Suppose you want to project high dimensional data into lower dimensions. The two most famous dimensionality reduction algorithms used here are PCA and t-SNE. Let's say you have applied both algorithms respectively on data "X" and you got the datasets "X_projected_PCA" , "X_projected_tSNE".

Which of the following statements is true for "X_projected_PCA" & "X_projected_tSNE" ?

A) X_projected_PCA will have interpretation in the nearest neighbour space.

B) X_projected_tSNE will have interpretation in the nearest neighbour space.

C) Both will have interpretation in the nearest neighbour space.

D) None of them will have interpretation in the nearest neighbour space.

Context: 16-17

Given below are three scatter plots for two features (Image 1, 2 & 3 from left to right).
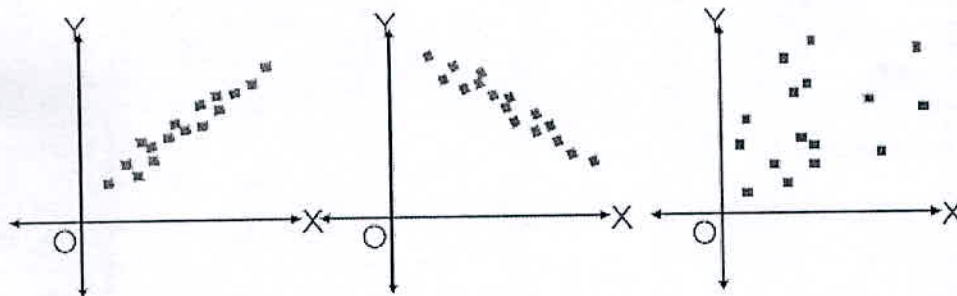
16) In the above images, which of the following is/are examples of multi-collinear features?

A) Features in Image 1

B) Features in Image 2

C) Features in Image 3

D) Features in Image 1 & 2

E) Features in Image 2 & 3

F) Features in Image 3 & 1

17) In previous question, suppose you have identified multi-collinear features. Which of the following action(s) would you perform next?

1. Remove both collinear variables.
2. Instead of removing both variables, we can remove only one variable.
3. Removing correlated variables might lead to loss of information. In order to retain those variables, we can use penalized regression models like ridge or lasso regression.

A) Only 1

B) Only 2

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C) Only 3

D) Either 1 or 3

E) Either 2 or 3

18) Adding a non-important feature to a linear regression model may result in.

1. **Increase in R-square**
2. **Decrease in R-square**

A) Only 1 is correct

B) Only 2 is correct

C) Either 1 or 2

D) None of these

19) Suppose, you are given three variables X, Y and Z. The Pearson correlation coefficients for (X, Y), (Y, Z) and (X, Z) are C1, C2 & C3 respectively.

Now, you have added 2 in all values of X (i.e.new values become X+2), subtracted 2 from all values of Y (i.e. new values are Y-2) and Z remains the same. The new coefficients for (X,Y), (Y,Z) and (X,Z) are given by D1, D2 & D3 respectively. How do the values of D1, D2 & D3 relate to C1, C2 & C3?

A) D1= C1, D2 < C2, D3 > C3

B) D1 = C1, D2 > C2, D3 > C3

C) D1 = C1, D2 > C2, D3 < C3

D) D1 = C1, D2 < C2, D3 < C3

E) D1 = C1, D2 = C2, D3 = C3

F) Cannot be determined

20) Imagine, you are solving a classification problems with highly imbalanced class. The majority class is observed 99% of times in the training data.

Your model has 99% accuracy after taking the predictions on test data. Which of the following is true in such a case?

1. Accuracy metric is not a good idea for imbalanced class problems.
2. Accuracy metric is a good idea for imbalanced class problems.
3. Precision and recall metrics are good for imbalanced class problems.
4. Precision and recall metrics aren't good for imbalanced class problems.

A) 1 and 3

B) 1 and 4

C) 2 and 3

D) 2 and 4

21) In ensemble learning, you aggregate the predictions for weak learners, so that an ensemble of these models will give a better prediction than prediction of individual models.
Which of the following statements is / are true for weak learners used in ensemble model?

1. They don't usually overfit.

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Department of Computer Science & Engineering

2. They have high bias, so they cannot solve complex learning problems
3. They usually overfit.

A) 1 and 2
B) 1 and 3
C) 2 and 3
D) Only 1
E) Only 2
F) None of the above

22) Which of the following options is/are true for K-fold cross-validation?

1. Increase in K will result in higher time required to cross validate the result.
2. Higher values of K will result in higher confidence on the cross-validation result as compared to lower value of K.
3. If K=N, then it is called Leave one out cross validation, where N is the number of observations.

A) 1 and 2
B) 2 and 3
C) 1 and 3
D) 1,2 and 3

Question Context 23-24
Cross-validation is an important step in machine learning for hyper parameter tuning. Let's say you are tuning a hyper-parameter "max_depth" for GBM by selecting it from 10 different depth values (values are greater than 2) for tree based model using 5-fold cross validation.
Time taken by an algorithm for training (on a model with max_depth 2) 4-fold is 10 seconds and for the prediction on remaining 1-fold is 2 seconds.
Note: Ignore hardware dependencies from the equation.

23) Which of the following option is true for overall execution time for 5-fold cross validation with 10 different values of "max_depth"?
A) Less than 100 seconds
B) 100 – 300 seconds
C) 300 – 600 seconds
D) More than or equal to 600 seconds
C) None of the above
D) Can't estimate

24) In previous question, if you train the same algorithm for tuning 2 hyper parameters say "max_depth" and "learning_rate".
You want to select the right value against "max_depth" (from given 10 depth values) and learning rate (from given 5 different learning rates). In such cases, which of the following will represent the overall time?
A) 1000-1500 second
D) 1500 2000 Second

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C) More than or equal to 3000 Second

D) None of these

25) Given below is a scenario for training error TE and Validation error VE for a machine learning algorithm M1. You want to choose a hyperparameter (H) based on TE and VE.

H	TE	VE
1	105	90
2	200	85
3	250	96
4	105	85
5	300	100

Which value of H will you choose based on the above table?

A) 1

B) 2

C) 3

D) 4

E) 5

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2.	Dr. GURURAJ MURTUGUDDE	Professor	
3.	Dr. PRAVEEN KUMAR K V	Professor	
4.	Prof. CHAITHRA	Associate Professor	
5.	Prof. LATHA A	Assistant Professor	
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5 DAYS CERTIFICATION COURSE ON "MACHINE LEARNING (SGCS74)"

SCHEME

1. Solution: (B)

Ordinal variables are the variables which has some order in their categories. For example, grade A should be consider as high grade than grade B.

2.Solution: (A)A deterministic algorithm is that in which output does not change on different runs. PCA would give the same result if we run again, but not k-means.

3. Solution: (A)

$Y=X2$. Note that, they are not only associated, but one is a function of the other and Pearson correlation between them is 0.

4.Solution: (A) In SGD for each iteration you choose the batch which is generally contain the random sample of data But in case of GD each iteration contain the all of the training observations.

5.Solution: (B) Usually, if we increase the depth of tree it will cause overfitting. Learning rate is not an hyperparameter in random forest. Increase in the number of tree will cause under fitting.

6.Solution:(A)

You can think that the number of views of articles is the continuous target variable which fall under the regression problem. So, mean squared error will be used as an evaluation metrics.

7.Solution: (D)

The range of SIGMOID function is [0,1].

The range of the tanh function is [-1,1].

The range of the RELU function is [0, infinity].

So Option D is the right answer.

$$-\sum p(x) * log p(x)$$

8.Solution: (A) The formula for entropy is

So the answer is A.

9.Solution: (D) Both are true, The OHE will fail to encode the categories which is present in test but not in train so it could be one of the main challenges while applying OHE. The challenge given in option B is also true you need to more careful while applying OHE if frequency distribution doesn't same in train and test.

10.Solution: (B)

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Both models (model1 and model2) are used in Word2vec algorithm. The model1 represent a CBOW model where as Model2 represent the Skip gram model.

11.Solution: (B) The function is a tanh because the this function output range is between (-1,-1).

12.Solution: (B) Log loss cannot have negative values.

13.Solution: (E)

In statistical hypothesis testing, a type I error is the incorrect rejection of a true null hypothesis (a "false positive"), while a type II error is incorrectly retaining a false null hypothesis (a "false negative").

14.Solution: (D)

Stemming is a rudimentary rule-based process of stripping the suffixes ("ing", "ly", "es", "s" etc) from a word.

Stop words are those words which will have not relevant to the context of the data for example is/am/are.

Object Standardization is also one of the good way to pre-process the text.

15.Solution: (B)

t-SNE algorithm considers nearest neighbour points to reduce the dimensionality of the data. So, after using t-SNE we can think that reduced dimensions will also have interpretation in nearest neighbour space. But in the case of PCA it is not the case.

16.Solution: (D)

In Image 1, features have high positive correlation where as in Image 2 has high negative correlation between the features so in both images pair of features are the example of multicollinear features.

17.Solution: (E)

You cannot remove the both features because after removing the both features you will lose all of the information so you should either remove the only 1 feature or you can use the regularization algorithm like L1 and L2.

18.Solution: (A)

After adding a feature in feature space, whether that feature is important or unimportant features the R-squared always increase

19.Solution: (E) Correlation between the features won't change if you add or subtract a value in the features.

20.Solution: (A) Refer the question number 4 from in this article.

21.Solution: (A)

Weak learners are sure about particular part of a problem. So, they usually don't overfit which means that weak learners have low variance and high bias.

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22.Solution: (D)

Larger k value means less bias towards overestimating the true expected error (as training folds will be closer to the total dataset) and higher running time (as you are getting closer to the limit case: Leave-One-Out CV). We also need to consider the variance between the k folds accuracy while selecting the k.

23.Solution: (D)

Each iteration for depth "2" in 5-fold cross validation will take 10 secs for training and 2 second for testing. So, 5 folds will take 12*5 = 60 seconds. Since we are searching over the 10 depth values so the algorithm would take 60*10 = 600 seconds. But training and testing a model on depth greater than 2 will take more time than depth "2" so overall timing would be greater than 600.

24.Solution: (D)Same as question number 23.

25.Solution: (D)Looking at the table, option D seems the best

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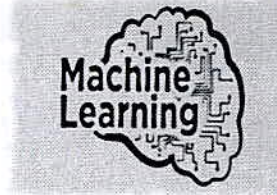Bangalore- 560 057

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Department of Computer Science & Engineering
FEEDBACK ANALYSIS

Certification Programme: **"Machine Learning(SGCS74)"**

No. of students participated	Student Feedback Analysis			
	Excellent(5)	Very Good(4)	Good(3)	Fair(2&1)
45	38	4	2	1

Student Feedback Analysis
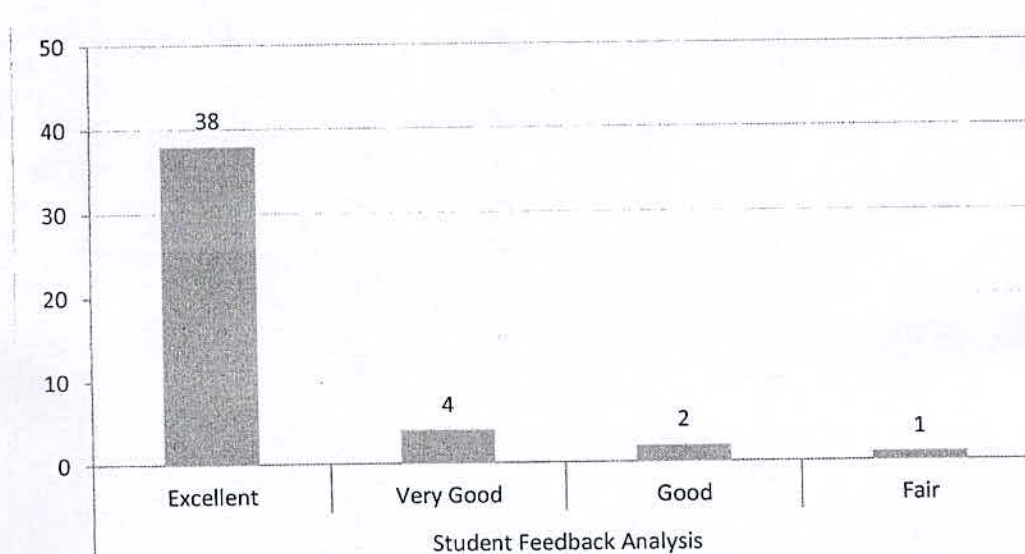
Action Report:

84 % of students were completely happy with the certification program, 9 % of students felt it was a very good program and remaining 7 % of students felt it was a good program

Action Taken:

The Feedback report which was collected from the students were sent to the principal and he would take necessary actions based on the comments and conduct more programs for the benefit of students.

Program Coordinator

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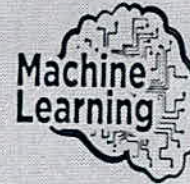## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

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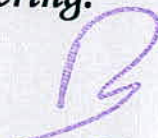## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

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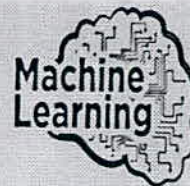
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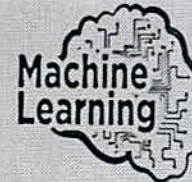# SAPTHAGIRI COLLEGE OF ENGINEERING

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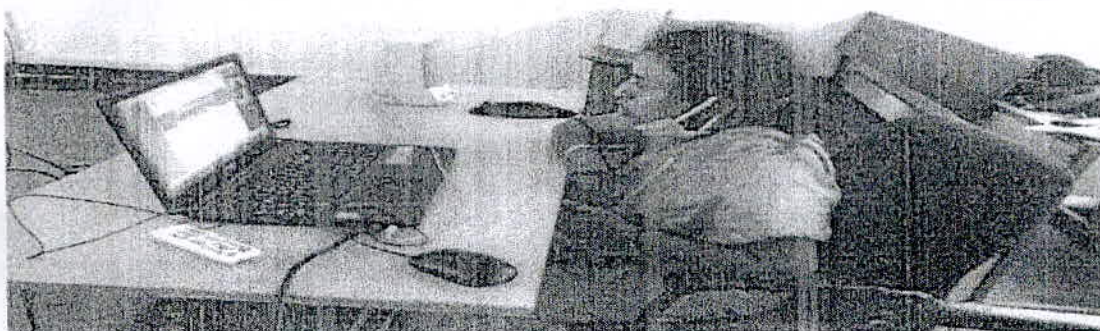
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online Five Days Student Development Programme on "Machine Learning" in collaboration with CSE Faculties was organized by Department of Computer Science and Engineering at Sapthagiri College of Engineering, Bangalore from 16- 21 December, 2020. This programme was a combination of theoretical Talks & Hands-On experiments. This SDP aims to provide opportunities to faculty members to enrich their technical knowledge in the field of Machine Learning. The Programme also intends to develop the knowledge of participants for ML Program Design & Development in the relevant field for inculcating learning values in students. The Programme also intends to develop the culture in participants for motivation the relevant field for inculcating learning values in students and guiding and monitoring their progress. The SDP was attended by Students of Computer Science and Engineering..

Welcome Speech by HOD CSE

There were totally 114 student participants registered for the SDP Conducted by Department of Computer Science and Engineering.

Day1:

CSE HOD Dr. KamalakshiNaganna gave Welcome address to all the participants.

In the Morning Session Prof.Suriya Prakash J, Assistant Professor, Department of Computer Science &Engineering, Sapthagiri college of Engineering gave Handson Session on Anaconda IDE Installation.

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Department of Computer Science & Engineering
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In the Afternoon Session Prof.A.Latha, Assistant Professor, Department of Computer Science & Engineering, Sapthagiri college of Engineering gave Handson Session on Python Programming.

Day 2:

The Session on Introduction to Machine Learning & Job Oppurtunities by Dr.Kamalakshi Naganna, Professor, Department of Computer Science & Engineering, Sapthagiri college of Engineering .Afternoon Hands on Session given on Dimensionality Reduction by Prof.Suriya Prakash, Assistant Professor, Department of Computer Science &Engineering, Sapthagiri college of Engineering.

Day 3:

The Session on KNN & Random Forest Algorithm by Prof.Rashmi, Assistant Professor, Department of Computer Science &Engineering, Sapthagiri college of Engineering, Infosys followed by Hands on session on Linear regression Prof.Kiran,Assistant Professor,Department of Computer Science &Engineering,Sapthagiri college of Engineering.

Day 4:

The Session on ADHOC Network Dr.Praveen Kumar, Professor, Department of Computer Science &Engineering, Sapthagiri college of Engineering. Followed by Hands on session on AI by Dr.Guru Raj, Professor, Department of Computer Science &Engineering, Sapthagiri college of Enginnering

Day 5:

The Session on Application of Machine Learning by Prof.Madhushree, Assistant Professor, Department of Computer Science &Engineering, Sapthagiri college of Engineering .Followed by Ecertificates Send to all Participants Mail ID and also Appreciation Certificate sent to Resource Persons Mail Id.

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