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VIMAL JYOTHI ENGINEERING COLLEGE, CHEMPERI

**DEPARTMENT OF COMPUTER SCIENCE &
ENGINEERING**

Report on value added course

“Machine Learning”

for

S8 CSE- B (2019-23 BATCH)



VIMAL JYOTHI ENGINEERING COLLEGE

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

OFFERING AN ADD-ON
COURSE

MACHINE LEARNING

COURSE CODE ADCS 702
COURSE DURATION 5 days (30 Hours)

IN ASSOCIATION WITH

EVOLVE ROBOTICS

FOR 8TH SEMESTER COMPUTER
SCIENCE ENGINEERING STUDENTS

VENUE: SOFTWARE LAB
ON MARCH 6, 7, 8, 11, 12

**TRAINING INSTITUTE:
EVOLVE ROBOTICS**

**FUNDED AND SPONSORED BY:
VIMAL JYOTHI ENGINEERING COLLEGE**

Convener: Ms.Divya B (HoD)

Staff Coordinators: Mr.Abhiram P
Ms.Rajitha KV



Abhiram.P

ADD-ON COURSE REPORT ON MACHINE LEARNING FOR SS CSE-B STUDENTS

An Add-on Course on Machine learning was organized on March 6th, 7th, 8th, 11th and 12th at the Software lab of the CSE department. The aim of this course was to provide additional training to the 8th semester students on various aspects of Machine learning. The course covered various topics, including introduction to machine learning, ANN, CNN, NLP, Python libraries, Matplotlib, Keras/Tensorflow.

This report provides a summary of the course activities and its outcomes:

Day 1 (6th March):

The Course began with Introduction to Machine Learning. The trainer explained various examples of Machine Learning applications. The trainer also discussed python libraries, ML libraries – numpy and Introduction to pandas. By the end of the day, the students had a good understanding of how machine learning is used for solving different types of life problems. The students learned about the best libraries of python used for machine learning.

Day 2 (7th March): On the second day of the course, the students were introduced to Supervised learning - Classification, Regression, Unsupervised Learning, Clustering, and Association. The trainer explained various classification and regression algorithms. The students were given hands-on training on how to train and test datasets in different algorithms.

Day 3 (8th March): The third day of the course focused on Deep learning. The trainer explained the basics of ANN, Multilayered neural network, CNN and DNN. The students were given hands-on training on different deep learning algorithms. The trainer also discussed Tensor flow and Keras. By the end of the day, the students were able to create small projects.

Day 4 (10th March): On the fourth day of the course, the students were introduced to Natural language processing, Computer vision, Libraries, Applications.. The trainer also discussed the topics Introduction to Matplotlib and Introduction to scipy.

Day 5 (11th March): On the fifth day of the program, the students developed simple machine learning related projects. The trainer discussed various career opportunities in the machine learning and deep learning sector.

The course was executed by Evolve Robotics, which is a leading organization in the field of robotics and artificial intelligence. The instructors were highly knowledgeable and experienced in their respective fields and provided valuable insights into the latest developments in machine learning and deep learning. Overall, this value-added course has provided a solid foundation in machine learning and deep learning, and the knowledge and skills that students have gained will be invaluable to their future academic and professional pursuits.

Ahmad P
~~ATP~~

Curriculum

Course Description

Over the course of the program, our students gain a deep understanding of fundamental concepts and techniques related to machine learning and deep learning. The course will provide various tools and frameworks such as Python, TensorFlow, and Keras, which are commonly used in these fields. Through practical assignments and hands-on projects, the students are able to develop their skills in data preprocessing, model building, and evaluation.

Course Objective

1. To introduce the prominent methods for machine learning.
2. To study the basics of supervised and unsupervised learning.
3. To study the basics of deep learning and different Python Libraries.
4. To familiarize students with Tensor flow and Keras.
5. Students should be able to do a project on Machine learning.

Course Outcomes

After the completion of this course student will be able to

- 1) Understand the basic knowledge about machine learning
- 2) Familiarize about different Python Libraries.
- 3) Familiarize the working of classifier models and identify classifier models for typical machine learning applications.
- 4) Build a Neural Network model using TensorFlow.
- 5) Acquire knowledge to develop DNN using Keras/TensorFlow.

CO-PO Mapping

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	-	2	-	3	3	-	-	-	-	-	3	-	-
CO2	3	-	3	-	3	3	-	-	3	-	3	3	-	-
CO3	3	-	2	-	3	3	-	-	3	-	3	3	-	-
CO4	3	-	2	-	3	3	-	-	3	-	3	3	-	-
CO5	3	-	3	-	3	3	-	-	3	-	3	3	-	-

Abhinav.P
~~Signature~~

Syllabus

Module 1: Introduction to Machine Learning, Examples of Machine Learning applications, Introduction to python libraries, ML libraries – numpy, Introduction to pandas.

Module 2: Supervised learning - Classification, Regression, Unsupervised Learning, Clustering, and Association.

Module 3: Introduction to ANN, Multilayered neural network, CNN, DNN, Steps in model creation, Introduction to Tensor flow and Keras.

Module 4: Natural language processing, Computer vision, Libraries, Applications, Introduction to Matplotlib, Introduction to scipy.

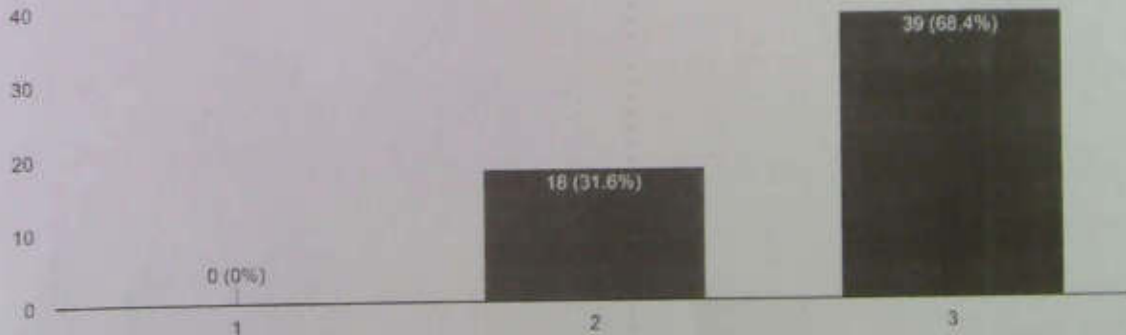
Module 5: Project – Develop a DNN using Keras/ Tensorflow.

Feedback from students:

On a scale of 1 to 3 how do you rate the add-on course classes? 1 - Poor 2 - Satisfactory 3 -

Excellent

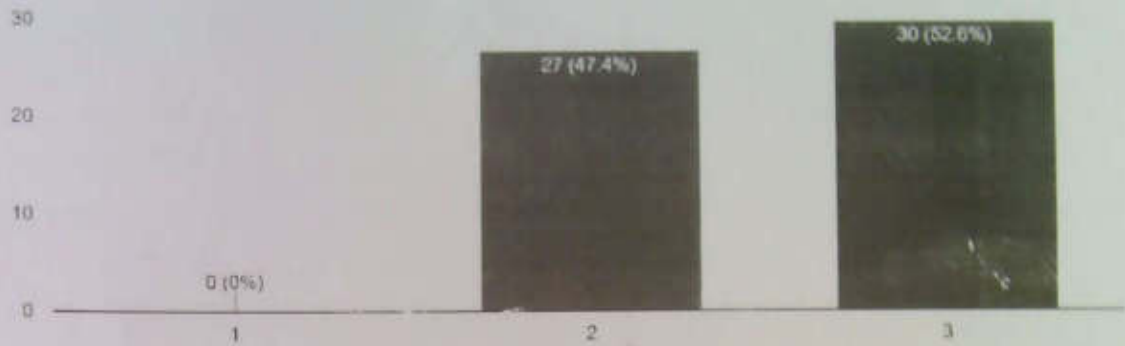
57 responses



Altamir P
S. P.

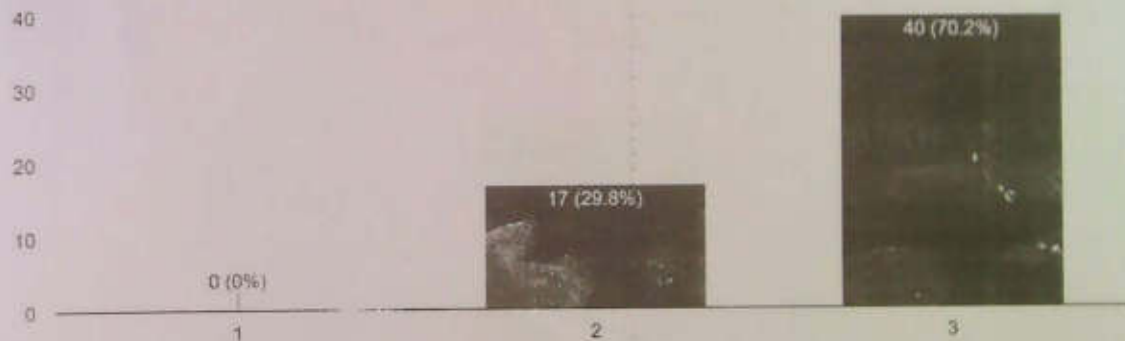
You got sufficient opportunity for exploring your creativity, technical skills and improving your design ideas on Machine learning? (P03, P05) 1 - Poor 2 - Satisfactory 3 - Excellent

57 responses



The software and tools discussed during this event were relevant and met your curriculum gaps.(P01,P03,P05) 1 - Poor, 2 - Satisfactory, 3 - Excellent

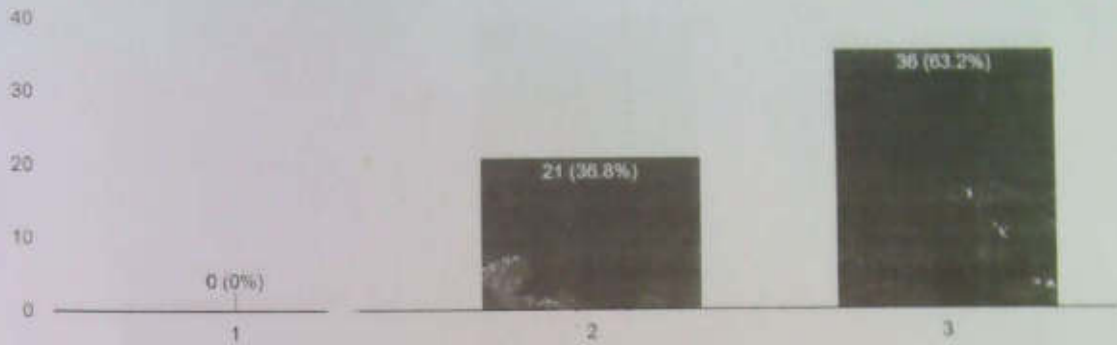
57 responses



Abdham P
(Signature)

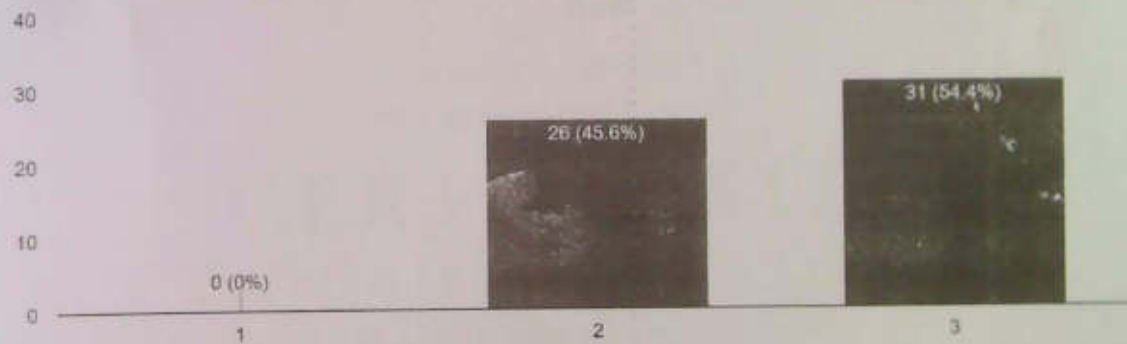
Were you able to perform effectively as an individual and as a team, and follow the instructions? ?
(PO9, PO11, PO12) 1 - Poor 2 - Satisfactory 3 - Excellent

57 responses



The software tools helped you in designing and developing a demonstrable project, which can be used in industrial sectors. (PO5, PO12) 1 - Poor 2 - Satisfactory 3 - Excellent

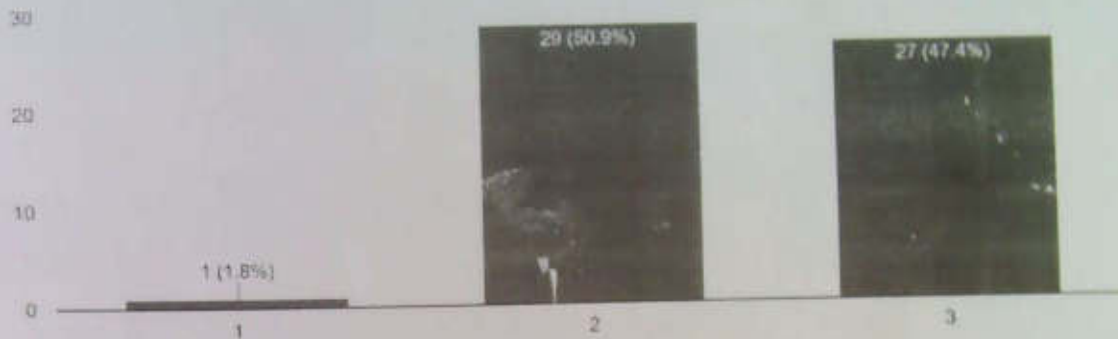
57 responses




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What is your level of learning on Machine learning after this add-on course? 1 - Poor 2 - Satisfactory 3 - Excellent


57 responses



SAMPLE CERTIFICATE



evolve
ROBOTICS
simply evolved



VIMAL JYOTHI
ENGINEERING COLLEGE
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

VALUE ADDED COURSE ON
"MACHINE LEARNING"


CERTIFICATE OF PARTICIPATION

THE FOLLOWING AWARD IS GIVEN TO

Ranjul Arumadi

HAS PARTICIPATED VALUE ADDED COURSE PROGRAMME ON "MACHINE LEARNING" ORGANISED BY
THE DEPARTMENT OF COMPUTER SCIENCE ENGINEERING, VIMAL JYOTHI ENGINEERING COLLEGE
IN ASSOCIATION WITH EVOLVE ROBOTICS
ON MARCH 6,7,8,11,12 2023

Convener
Prof. Divya B
H.o.D, CSE



Dr. Benny Joseph
Principal

Arumadi
[Signature]

PHOTOS



AP
Rajitha KV
AP - CSE



Alvinson P




DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Add on Course-Machine Learning

Attendance Sheet - 07/03/2023

Sl.No	Name	Semester & Branch	Signature
1	SIOHARTH SURESH NAMBIAR	S8 CSE B	
2	Amsalraj - P	S8, CSE-B	
3	Aromal prakash ku	S8, CSE-B	
4	Anurag AM	S8, CSE-B	
5	Muhammed Tassim	S8, CSE-B	
6	Eakey Thomas	S8, CSE-B	
7	Sreevedh Harish	S8, CSE-B	
8	Athiza Das	S8 CSE B	
9	Anupama i.v	S8 CSE B	
10	Darshan Dinesh	S8 CSE B	
11	Akshay Jayachandran v.v	S8 CSE B	
12	Eidhaath AS	S8 CSE B	
13	Anjima Govindan	S8 CSE B	
14	Rhea Renjith	S8 CSE B	



15	Tithin Jose	SB CSE B	Tithin
16	Sooraj Mohan	SB CSE B	Sooraj
17	Janvin Joseph	SB CSE B	Janvin
18	Ranjul Azumadi	SB CSE B	Ranjul
19	Roby K S	SB CSE B	Roby
20	Ashwin. S. Nambiar	SB CSE - B	Ashwin
21	Nihal D	SB CSE - B	Nihal
22	Adila Farha	SB - CSE - B	Adila
23	Aysha Nahadha	SB - CSE - B	Aysha
24	Deekshith K K	SB - CSE B	Deekshith
25	Sanyuktha Sanjay	SB - CSE B	Sanyuktha
26	Aneesha S	SB - CSE B	Aneesha
27	Adikhya T.K	SB - CSE - B	Adikhya
28	Adwaidsahadewan M	SB - CSE B	Adwaidsahadewan
29	Alansaji	"	Alansaji
30	Akhil kumar	"	Akhil
31	Achal Dev	"	Achal
32	Abhijai K	"	Abhijai



33	Nathasha Prabhakaran Nathasha KV	S8 CSE B	Nathasha
34	Anagha P.P	S8 CSE B	Anagha
35	Shradha Sujith	S8 CSE B	Shradha
36	Harold Prakash	S8 CSE B	Harold
37	Saxand L. Radran	S8 CSE B	Saxand
38	Gangathi P.V	S8 CSE B	Gangathi
39	Sneha Anil	S8 CSE B	Sneha
40	Anusree Venu	S8 CSE B	Anusree
41	Sona Jose	S8 CSE B	Sona
42	Farisa W.P	S8 CSE B	Farisa
43	Masy Jos	S8 CSE B	Masy
44	Vismaya Vinuth Kumari	S8 CSE B	Vismaya
45	Shijas P	S8 CSE B	Shijas
46	Diya P	S8 CSE B	Diya
47	Devika C	S8 CSE B	Devika
48	Adwelha Jalgunan	S8 CSE B	Adwelha
49			
50			



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Add on Course-Machine Learning

Attendance Sheet - 08/03/2023

Sl.No	Name	Semester & Branch	Signature
1	Masy Jay	S8 CSE	Masy
2	Farisa KP	S8 CSE	Farisa
3	Sona Jose	S8 CSE	Sona
4	Sneha Anil	S8 CSE	Sneha
5	Anuroze Venu	S8 CSE	Anuroze
6	Gayathri - P.V	S8 CSE	Gayathri
7	Sanand Chandran	S8 CSE	Sanand
8	Shradha Sujith	S8 CSE	Shradha
9	Harold Prakash	S8 CSE	Harold
10	Adwait Sabadevan . M	S8 CSE . B	Adwait
11	Alan Saji	S8 CSE . B	Alan
12	Abhijai . k	S8 CSE . B	Abhijai
13	Achal Dev	S8 CSE . B	Achal
14	Akhil kumar	S8 CSE . B	Akhil



15	Anagha. P.P	S8 CSE B	
16	Nathasha KV	S8 CSE B	
17	Abi Adithya.T.K	S8 CSE B	
18	Aneesha.S	S8 CSE B	
19	Sanyuktha Sanyug	S8 CSE-B	
20	Aysha Nahadi	S8-CSE-B	
21	Deekshith K.K	S8-CSE-B	
22	Adila Farha	S8-CSE-B	
23	Nihal-O	S8-CSE-B	
24	Ashwin S Nambiar	S8-CSE-B	
25	Roby K.S	S8-CSE-B	
26	Ranjul Arumadi	S8-CSE-B	
27	Janvin Joseph	S8 CSE B	
28	Souraj Mohan	S8 CSE B	
29	Sidharth AS	S8 CSE B	
30	Jithun Jose	S8 CSE B	
31	Rhea Ranjith	S8 CSE B	
32	Arjuna Govindan	S8 CSE B	



33	AKSAY Jayachandran VV	SBCSE	
34	DANISH Dinesh	SBCSE	
35	Anupama KV	SBCSE	
36	Alhiza Das	S8 CSE 4	
37	Soumyadip Harish	S8 CSE-B	
38	Muhammed Jashim	S8 CSE-B	
39	Eaby Thomas C	S8 CSE-B	
40	Anomal Prakash KV	S8 CSE-B	
41	Anurag A M	S8 CSE-B	
42	Sidharth Suresh	S8 CSE-B	
43	Amal rag	S8 CSE-B	
44	Vismaya Vinuth kumar	S8 CSE-B	
45	Shijas P	S8 CSE-B	
46	Adwetha. Jalgunan	S8 CSE-B	
47			
48			
49			
50			



ADCS702-MACHINE LEARNING

Evaluation Rubrics

No	Parameters	Mark	Fair	Very Good	Outstanding
1	Basic knowledge about machine learning. [CO 1]	5	(1 Marks) The student has a limited understanding of the basic concepts of machine learning	(2-3 Marks) The student has a solid understanding of the basic concepts of machine learning and can accurately describe the concepts	(4-5)Marks) The student has a thorough understanding of the basic concepts of machine learning and can accurately describe the types of machine learning, common algorithms.
2	Understanding of different Python libraries [CO 2]	5	(1 Marks) The student has a limited understanding of different Python libraries and their features.	(2-3 Marks) The student has a solid understanding of different Python libraries and their features	(4-5 Marks) The student has a thorough understanding of different Python libraries and their features
3	Understanding of classifier models and identify classifier models for typical machine learning applications. [CO 3]	5	(1 Marks) The student has a limited understanding of how classifier models work and is unable to identify appropriate classifier models for typical machine learning applications.	(2-3 Marks) The student has a solid understanding of how classifier models work and can identify appropriate classifier models for typical machine learning applications.	(4-5 Marks) The student has a thorough understanding of how classifier models work and can accurately identify appropriate classifier models for typical machine learning applications.
4	Knowledge of Neural Network model using TensorFlow. [CO 4]	5	(1 Marks) The student has a limited understanding of neural networks and is unable to implement a basic neural network using TensorFlow.	(2-3 Marks) The student has a solid understanding of neural networks and can implement a basic neural network using TensorFlow, but may struggle with training and evaluating the model.	(4-5 Marks) The student has a thorough understanding of neural networks and can implement a neural network using TensorFlow, train and evaluate it on a dataset, and tune its hyperparameters to optimize its performance.



5	Knowledge to develop DNN using Keras/TensorFlow. [CO 5]	5	(1 Marks) The student has a limited understanding of deep neural networks and is unfamiliar with Keras/TensorFlow libraries.	(2-3 Marks) The student has a solid understanding of deep neural networks and is familiar with Keras/TensorFlow libraries	(4-5 Marks) The student has a thorough understanding of deep neural networks and can implement complex models using Keras/TensorFlow, optimize hyperparameters, and apply transfer learning to improve model performance.
6	Implementation [CO5]	15	(1 – 5 Marks) The implementation meets basic functional requirements, but may have some minor errors, inconsistencies, or inefficiencies in the code or testing.	(6-10 Marks) The implementation meets most of the functional requirements and has clean, well-organized, and documented code. It is tested and performs well.	(11-15 Marks) The implementation meets all the functional requirements and has clean, well-organized, and documented code. It is thoroughly tested and performs very well.
7	Report [CO1] [CO5]	10	(1 – 3 Marks) The report poorly-written, poorly-organized, and free of grammatical errors and the report describe the methodology used in the project	(5 Marks) The report fairly-written, fairly-organized, and free of grammatical errors. The report describe the methodology used in the project, including the data collection process, data preprocessing, feature engineering, model selection.	(6-10 Marks) The report well-written, well-organized, and free of grammatical errors and typos. The report describe the methodology used in the project in detail, including the data collection process, data preprocessing, feature engineering, model selection, and evaluation metrics

[Handwritten Signature]
 RAJITHA K V
 AP, CSE

VIMAL JYOTHI ENGINEERING COLLEGE
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Batch : 2019-2023 CSE B

Year of study: 2019-2023

Name of the Subject with code: ADCS702-MACHINE LEARNING

Name of the Staff: Ms. Rajitha K V, Mr Abhiram P

No of students: 58

CO1	Understand the basic knowledge about machine learning
CO2	Familiarize about different Python Libraries.
CO3	Familiarize the working of classifier models and identify classifier models for typical machine learning applications.
CO4	Build a Neural Network model using TensorFlow.
CO5	Students should be able to do a project on Machine learning.


	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO 1	3	-	2	-	-	3	-	-	-	-	-	3	-	-
CO 2	3	-	3	-	3	3	-	-	-	-	-	3	-	-
CO 3	3	-	2	-	3	3	-	-	-	-	-	3	-	-
CO 4	3	-	2	-	3	3	-	-	-	-	-	3	-	-
CO 5	3	-	3	-	3	3	-	-	3	-	3	3	-	-
AVERAGE	3		2.4		3	3			3		3	3		

Attainment Level Attainment score given, when

Attainment Level 1 50 % of students score more than 45%

Attainment Level 2 60 % of students score more than 45%

Attainment Level 3 70 % of students score more than 45%


 Rajitha K V
 AP, CSE

CO 1

SL. No.	Register No.	Name of the student	Basic knowledge about machine learning.	Report
		Max Mark	5	15
1	LVML19CS116	Anurag A M	5	15
2	LVML19CS117	Aromal Prakash K V	5	15
3	LVML19CS118	Kiran P P	5	15
4	VML19CS002	Abhijai K	5	15
5	VML19CS005	Achal Dev P	5	15
6	VML19CS007	Adila Farha P K	5	15
7	VML19CS008	Adithya T K	5	15
8	VML19CS010	Adwaid Sahadevan M	5	15
9	VML19CS012	Adwetha Falgunan	5	15
10	VML19CS015	Akhil Kumar K	5	15
11	VML19CS017	Akshay Jayachandran V V	5	15
12	VML19CS019	Alan Saji	5	15
13	VML19CS021	Aleena Mathews	5	15
14	VML19CS023	Alisha Mathew	5	15
15	VML19CS024	Amalraj P	5	15
16	VML19CS026	Anagha P P	5	15
17	VML19CS028	Aneesha S	5	15
18	VML19CS030	Anjima Govindan	5	15
19	VML19CS031	Annapoorna K K	5	15
20	VML19CS035	Anupama K V	5	15
21	VML19CS037	Anusree Venu	5	15
22	VML19CS039	Arya Sajiv	5	15
23	VML19CS040	Ashwin S Nambiar	5	15
24	VML19CS042	Athira Das	5	15
25	VML19CS044	Aysha Nahadha	5	15
26	VML19CS046	Darsan Dinesh	5	15
27	VML19CS048	Deekshith K K	5	15
28	VML19CS050	Devika C	5	15
29	VML19CS052	Diya P	5	15
30	VML19CS054	Don Mariya	5	15
31	VML19CS055	Eaby Thor. S C	5	15
32	VML19CS058	Farisa K P	5	15
33	VML19CS061	Harold Prakash	5	15
34	VML19CS063	Janvin Joseph	5	15
35	VML19CS065	Jithin Jose	5	15
36	VML19CS067	Kavya Pushpan	5	15
37	VML19CS069	Kiran Valsalan Nair	5	15
38	VML19CS071	Mary Joy	5	15
39	VML19CS074	Nathasha K V	5	15


40	VML19CS075	Nihal O	5	15
41	VML19CS080	Puliyile Kandi Muhammed Jassim	5	15
42	VML19CS081	PV Gayathri	5	15
43	VML19CS083	Ranjul Arumadi	5	15
44	VML19CS084	Rhea Renjith	5	15
45	VML19CS086	Roby K S	5	15
46	VML19CS089	Sanand Chandran	5	15
47	VML19CS091	Sanjuktha Sanjay	5	15
48	VML19CS094	Sharanya Ullas	5	15
49	VML19CS096	Shijas P	5	15
50	VML19CS098	Shradha Sujith	5	15
51	VML19CS101	Sidharth A S	5	15
52	VML19CS103	Sidharth Suresh Nambiar	5	15
53	VML19CS104	Sneha Ani.	5	15
54	VML19CS106	Sona Jose	5	15
55	VML19CS108	Sooraj Mohan	5	15
56	VML19CS110	Sreevedh Hareesh	5	15
57	VML19CS112	Theerth M	5	15
58	VML19CS114	Vismaya Vinoth Kumar	5	15
Total Number of students attended			58	58
Target (45%) Mark			2.25	6.75
Total Number of students who have achieved Target (45 %)			58	58
Attainment percentage			100	100
Attainment Level			3	3
Total Attainment OF Each section			3	

Abhiram . P


CO 2

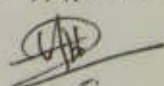
SL. No.	Register No.	Name of the student	Understanding of different Python libraries
Max Mark			
1	LVML19CS116	Anurag A M	5
2	LVML19CS117	Aromal Prakash K V	5
3	LVML19CS118	Kiran P P	5
4	VML19CS002	Abhijai K	5
5	VML19CS005	Achal Dev P	5
6	VML19CS007	Adila Farha P K	5
7	VML19CS008	Adithya T K	5
8	VML19CS010	Adwaid Sahadevan M	5
9	VML19CS012	Adwetha Falgunan	5
10	VML19CS015	Akhil Kumar K	5
11	VML19CS017	Akshay Jay. chandran V V	5
12	VML19CS019	Alan Saji	5
13	VML19CS021	Aleena Mathews	5
14	VML19CS023	Alisha Mathew	5
15	VML19CS024	Amalraj P	5
16	VML19CS026	Anagha P P	5
17	VML19CS028	Aneesha S	5
18	VML19CS030	Anjima Govindan	5
19	VML19CS031	Annapoorna K K	5
20	VML19CS035	Anupama K V	5
21	VML19CS037	Anusree Venu	5
22	VML19CS039	Arya Sajiv	5
23	VML19CS040	Ashwin S Nambiar	5
24	VML19CS042	Athira Das	5
25	VML19CS044	Aysha Nah jha	5
26	VML19CS046	Darsan Dinesh	5
27	VML19CS048	Deekshith K K	5
28	VML19CS050	Devika C	5
29	VML19CS052	Diya P	5
30	VML19CS054	Don Mariya	5
31	VML19CS055	Eaby Thomas C	5
32	VML19CS058	Farisa K P	5
33	VML19CS061	Harold Prakash	5
34	VML19CS063	Janvin Joseph	5
35	VML19CS065	Jithin Jose	5
36	VML19CS067	Kavya Pushpan	5
37	VML19CS069	Kiran Valsalan Nair	5
38	VML19CS071	Mary Joy	5
39	VML19CS074	Nathasha V	5

40	VML19CS075	Nihal O	5
41	VML19CS080	Puliyile Kandi Muhammed Jassim	5
42	VML19CS081	PV Gayathri	5
43	VML19CS083	Ranjul Arumadi	5
44	VML19CS084	Rhea Renjith	5
45	VML19CS086	Roby K S	5
46	VML19CS089	Sanand Ch. ndran	5
47	VML19CS091	Sanjuktha Sanjay	5
48	VML19CS094	Sharanya Ullas	5
49	VML19CS096	Shijas P	5
50	VML19CS098	Shradha Sujith	5
51	VML19CS101	Sidharth A S	5
52	VML19CS103	Sidharth Suresh Nambiar	5
53	VML19CS104	Sneha Anil	5
54	VML19CS106	Sona Jose	5
55	VML19CS108	Sooraj Mohan	5
56	VML19CS110	Sreevedh Hareesh	5
57	VML19CS112	Theerth M	5
58	VML19CS114	Vismaya Vinoth Kumar	5
Total Number of students attended			58
Target (45%) Mark			2.25
Total Number of students who have achieved Target (45 %)			58
Attainment percentage			100
Attainment Level			3
Total Attainment			3

Abhirami. P


CO 3			
SL. No.	Register No.	Name of the student	Understanding of classifier models and identify classifier models for typical machine learning applications.
Max Mark			5
1	LVML19CS116	Anurag A M	5
2	LVML19CS117	Aromal Prakash K V	5
3	LVML19CS118	Kiran P P	5
4	VML19CS002	Abhijai K	5
5	VML19CS005	Achal Dev P	5
6	VML19CS007	Adila Farha P K	5
7	VML19CS008	Adithya T K	5
8	VML19CS010	Adwaid Seshadevan M	5
9	VML19CS012	Adwetha F .Igunan	5
10	VML19CS015	Akhil Kumar K	5
11	VML19CS017	Akshay Jayachandran V V	5
12	VML19CS019	Alan Saji	5
13	VML19CS021	Aleena Mathews	5
14	VML19CS023	Alisha Mathew	5
15	VML19CS024	Amalraj P	5
16	VML19CS026	Anagha P P	5
17	VML19CS028	Aneesha S	5
18	VML19CS030	Anjima Govindan	5
19	VML19CS031	Annapoorna K K	5
20	VML19CS035	Anupama K V	5
21	VML19CS037	Anusree Venu	5
22	VML19CS039	Arya Sajiv	5
23	VML19CS040	Ashwin S N mbiar	5
24	VML19CS042	Athira Das	5
25	VML19CS044	Aysha Nahadha	5
26	VML19CS046	Darsan Dinosh	5
27	VML19CS048	Deekshith K K	5
28	VML19CS050	Devika C	5
29	VML19CS052	Diya P	5
30	VML19CS054	Don Mariya	5
31	VML19CS055	Eaby Thomas C	5
32	VML19CS058	Farisa K P	5
33	VML19CS061	Harold Prakash	5
34	VML19CS063	Janvin Joseph	5
35	VML19CS065	Jithin Jose	5
36	VML19CS067	Kavya Pushpan	5
37	VML19CS069	Kiran Valsan Nair	5

38	VML19CS071	Mary Joy	5
39	VML19CS074	Nathasha K V	5
40	VML19CS075	Nihal O	5
41	VML19CS080	Puliyile Kandi Muhammed Jassim	5
42	VML19CS081	PV Gayathri	5
43	VML19CS083	Ranjul Arumadi	5
44	VML19CS084	Rhea Renjith	5
45	VML19CS086	Roby K S	5
46	VML19CS089	Sanand Chandran	5
47	VML19CS091	Sanjuktha Anjay	5
48	VML19CS094	Sharanya Uilas	5
49	VML19CS096	Shijas P	5
50	VML19CS098	Shradha Sujith	5
51	VML19CS101	Sidharth A S	5
52	VML19CS103	Sidharth Suresh Nambiar	5
53	VML19CS104	Sneha Anil	5
54	VML19CS106	Sona Jose	5
55	VML19CS108	Sooraj Mohan	5
56	VML19CS110	Sreevedh Hareesh	5
57	VML19CS112	Theerth M	5
58	VML19CS114	Vismaya Vinoth Kumar	5
Total Number of students attended			58
Target (45%) Mark			2.25
Total Number of students who have achieved Target (45 %)			58
Attainment percentage			100
Attainment Level			3
Total Attainment OF Each section			3
IA Attainment			3
Other Assessment			0

Althirani P


CO 4

SL. No.	Register No.	Name of the student	Knowledge of Neural Network model using TensorFlow.
Max Mark			5
1	LVML19CS116	Anurag A M	5
2	LVML19CS117	Aromal Prakash K V	5
3	LVML19CS118	Kiran P P	5
4	VML19CS002	Abhijai K	5
5	VML19CS005	Achal Dev P	5
6	VML19CS007	Adila Farha P K	5
7	VML19CS008	Adithya T K	5
8	VML19CS010	Adwaid Sahadevan M	5
9	VML19CS012	Adwetha Falgunan	5
10	VML19CS015	Akhil Kum: K	5
11	VML19CS017	Akshay Jayachandran V V	5
12	VML19CS019	Alan Saji	5
13	VML19CS021	Aleena Mathews	5
14	VML19CS023	Alisha Mathew	5
15	VML19CS024	Amalraj P	5
16	VML19CS026	Anagha P P	5
17	VML19CS028	Aneesha S	5
18	VML19CS030	Anjima Govindan	5
19	VML19CS031	Annapoorna K K	5
20	VML19CS035	Anupama K V	5
21	VML19CS037	Anusree Venu	5
22	VML19CS039	Arya Sajiv	5
23	VML19CS040	Ashwin S Nambiar	5
24	VML19CS042	Athira Dar	5
25	VML19CS044	Aysha Nah. dha	5
26	VML19CS046	Darsan Dinesh	5
27	VML19CS048	Deekshith K K	5
28	VML19CS050	Devika C	5
29	VML19CS052	Diya P	5
30	VML19CS054	Don Mariya	5
31	VML19CS055	Eaby Thomas C	5
32	VML19CS058	Farisa K P	5
33	VML19CS061	Harold Prakash	5
34	VML19CS063	Janvin Joseph	5
35	VML19CS065	Jithin Jose	5
36	VML19CS067	Kavya Pushpan	5
37	VML19CS069	Kiran Valsalan Nair	5
38	VML19CS071	Mary Joy	5


39	VML19CS074	Nathasha K V	5
40	VML19CS075	Nihal O	5
41	VML19CS080	Puliyile Kandi Muhammed Jassim	5
42	VML19CS081	PV Gayathri	5
43	VML19CS083	Ranjul Arumadi	5
44	VML19CS084	Rhea Renjith	5
45	VML19CS086	Roby K S	5
46	VML19CS089	Sanand Chandran	5
47	VML19CS091	Sanjuktha Anjay	5
48	VML19CS094	Sharanya Ullas	5
49	VML19CS096	Shijas P	5
50	VML19CS098	Shradha Sujith	5
51	VML19CS101	Sidharth A S	5
52	VML19CS103	Sidharth Suresh Nambiar	5
53	VML19CS104	Sneha Anil	5
54	VML19CS106	Sona Jose	5
55	VML19CS108	Sooraj Mohan	5
56	VML19CS110	Sreevedh Hareesh	5
57	VML19CS112	Theerth M	5
58	VML19CS114	Vismaya Vinoth Kumar	5
Total Number of students attended			58
Target (45%) Mark			2.25
Total Number of students who have achieved Target (45 %)			58
Attainment percentage			100
Attainment Level			3
Total Attainment OF Each section			3
IA Attainment			3
Other Assessment			0

Abraham P


CO 5

SL. No.	Register No.	Name of the student	Knowledge to develop DNN using Keras/TensorFlow.	Implementation	Report
Max Mark				5	5
1	LVML19CS116	Anurag A M	5	5	5
2	LVML19CS117	Aromal Prakash K V	5	5	5
3	LVML19CS118	Kiran P P	5	5	5
4	VML19CS002	Abhijai K	5	5	5
5	VML19CS005	Achal Dev P	5	5	5
6	VML19CS007	Adila Farha P K	5	5	5
7	VML19CS008	Adithya T K	5	5	5
8	VML19CS010	Adwaid Sa. devan M	5	5	5
9	VML19CS012	Adwetha Falgunan	5	5	5
10	VML19CS015	Akhil Kumar K	5	5	5
11	VML19CS017	Akshay Jayachandran V V	5	5	5
12	VML19CS019	Alan Saji	5	5	5
13	VML19CS021	Aleena Mathews	5	5	5
14	VML19CS023	Alisha Mathew	5	5	5
15	VML19CS024	Amalraj P	5	5	5
16	VML19CS026	Anagha P P	5	5	5
17	VML19CS028	Aneesha S	5	5	5
18	VML19CS030	Anjima Govindan	5	5	5
19	VML19CS031	Annapoorna K K	5	5	5
20	VML19CS035	Anupama K V	5	5	5
21	VML19CS037	Anusree Venu	5	5	5
22	VML19CS039	Arya Sajiv	5	5	5
23	VML19CS040	Ashwin S N mbiar	5	5	5
24	VML19CS042	Athira Das	5	5	5
25	VML19CS044	Aysha Nahadha	5	5	5
26	VML19CS046	Darsan Dinesh	5	5	5
27	VML19CS048	Deekshith K K	5	5	5
28	VML19CS050	Devika C	5	5	5
29	VML19CS052	Diya P	5	5	5
30	VML19CS054	Don Mariya	5	5	5
31	VML19CS055	Eaby Thomas C	5	5	5
32	VML19CS058	Farisa K P	5	5	5
33	VML19CS061	Harold Prakash	5	5	5
34	VML19CS063	Janvin Joseph	5	5	5
35	VML19CS065	Jithin Jose	5	5	5
36	VML19CS067	Kavya Pushpan	5	5	5
37	VML19CS069	Kiran Valsa n Nair	5	5	5

38	VML19CS071	Mary Joy	5	5	5
39	VML19CS074	Nathasha K V	5	5	5
40	VML19CS075	Nihal O	5	5	5
41	VML19CS080	Puliyile Kandi Muhammed	5	5	5
42	VML19CS081	PV Gayathri	5	5	5
43	VML19CS083	Ranjul Arumadi	5	5	5
44	VML19CS084	Rhea Renjith	5	5	5
45	VML19CS086	Roby K S	5	5	5
46	VML19CS089	Sanand Chandran	5	5	5
47	VML19CS091	Sanjuktha Sanjay	5	5	5
48	VML19CS094	Sharanya Ullas	5	5	5
49	VML19CS096	Shijas P	5	5	5
50	VML19CS098	Shradha Sujith	5	5	5
51	VML19CS101	Sidharth A S	5	5	5
52	VML19CS103	Sidharth Suresh Nambiar	5	5	5
53	VML19CS104	Sneha Anil	5	5	5
54	VML19CS106	Sona Jose	5	5	5
55	VML19CS108	Sooraj Mohan	5	5	5
56	VML19CS110	Sreevedh Hareesh	5	5	5
57	VML19CS112	Theerth M	5	5	5
58	VML19CS114	Vismaya Vinodh Kumar	5	5	5
Total Number of students attended			58	58	58
Target (45%) Mark			2.25	2.25	2.25
Total Number of students who have achieved Target (58	58	58
Attainment percentage			100	100	100
Attainment Level			3	3	3
Total Attainment OF Each section			3		
IA Attainment			3		
Other Assessment			0		

Abhinav P


CO ATTAINMENT

Course Outcome	Project	Direct Attainment (Project)	Indirect Attainment (Course End Survey)	CO Attainment= Direct(80%) + Indirect (20%)
C01	3	3	3	3
C02	3	3	3	3
C03	3	3	3	3
C04	3	3	3	3
C05	3	3	3	3

Course Outcome	Project
C01	3
C02	3
C03	3
C04	3
C05	3

[Signature]
 R. Jithu. K. V
 AP, CSE

PO ATTAINMENT

Batch : 2019-2023 CSE B

Year of study: 2019-2023

Name of the Subject with code: ADCS702-MACHINE LEARNING

Name of the Staff: Ms. Rajitha K V, Mr Abhiram P

No of students: 58

CO	LEVEL	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO 1	3	3	-	2	-	3	3	-	-	-	-	-	3	-	-
CO 2	3	3	-	3	-	3	3	-	-	3	-	3	3	-	-
CO 3	3	3	-	2	-	3	3	-	-	3	-	3	3	-	-
CO 4	3	3	-	2	-	3	3	-	-	3	-	3	3	-	-
CO 5	3	3	-	3	-	3	3	-	-	3	-	3	3	-	-
PO		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
ATTAINED		3		2.4	-	3	3	-	-	3	-	3	3	-	-

ADD ON COURSE REPORT

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Class: S8 CSE B

Members:

Adila Farha PK
Adithya T K
Aleena Mathews
Alisha Mathew
Don Mariya
Kavya Pushpan
Nathasha K V
Sharanya Ullas
Sneha Anil
Vismaya Vinoth Kumar

Introduction:

Artificial intelligence consists of algorithms created to closely resemble the neural network in the human brain, enabling computers to use vast amounts of data to learn from their past performance and improve present and future outcomes. Artificial intelligence comes in a variety of forms, and it may be further split into Weak AI and Strong AI.

Machine learning is a subfield of AI. Machine learning is an application of AI that enables computers to gain knowledge from experience and execute particular jobs better. It gives computers the ability to analyse data and use statistical methods to learn from that data to enhance their performance on a particular activity. The area of computer science known as machine learning aims to create computer systems that can autonomously learn from experience in particular, by analysing the data they receive, and enhance the performance of particular jobs. Algorithms used in machine learning are frequently divided into supervised, unsupervised, and reinforcement learning categories.

Types of AI:

Narrow or Weak AI:

Narrow or weak AI refers to AI systems that are designed to perform specific tasks and are limited to those tasks. These systems are not capable of generalizing to new situations and require human intervention to adapt to new tasks or environments. Examples of narrow AI include voice assistants like Siri and Alexa, chatbots, recommendation systems, and image recognition systems.

Narrow AI systems are designed to excel at specific tasks, and they often do so with high accuracy and efficiency. However, they lack the flexibility and adaptability of human intelligence and are unable to perform tasks outside of their predefined scope.

General AI:

General AI, also known as artificial general intelligence (AGI), refers to AI systems that are capable of performing any intellectual task that a human can do. These systems would be able to reason, solve problems, learn, and adapt to new situations without human intervention. General AI is often considered to be the ultimate goal of AI research.

However, developing general AI is a highly challenging task, as it requires creating a system that can not only learn and reason but also understand the nuances and complexities of the world around it. While significant progress has been made in the field of AI, we are still far from achieving true general AI.

Superintelligence:

Superintelligence refers to AI systems that surpass human intelligence in all areas. These systems would be able to solve problems that are beyond human comprehension and potentially revolutionize fields like science, medicine, and engineering.

While superintelligence is currently hypothetical, many experts believe that it could become a reality in the future. However, there are also concerns about the potential risks associated with superintelligence, including the possibility of the AI systems becoming uncontrollable and posing a threat to humanity.

In summary, narrow AI refers to AI systems designed for specific tasks, general AI refers to AI systems capable of performing any intellectual task a human can do, and superintelligence refers to AI systems that surpass human intelligence in all areas.

Types of Machine Learning:

Supervised Learning:

Supervised learning is a type of machine learning where the model is trained on labeled data. This means that each input in the training data is associated with a corresponding output or label. For example, in an image classification task, each image in the training data would have a label indicating what object or scene is present in the image. The goal of supervised learning is to train a model to predict the correct output for new, unseen inputs. To do this, the model learns patterns and relationships in the labeled data and uses these to make predictions on new data.

Supervised learning algorithms can be divided into two main categories: regression and classification. Regression algorithms are used when the output is a continuous value, such as predicting a person's age or the price of a house. Classification algorithms are used when the output is a categorical variable, such as whether an email is spam or not, or what object is present in an image.

Some popular supervised learning algorithms include decision trees, random forests, support vector machines (SVMs), and neural networks.

Unsupervised Learning:

Unsupervised learning is a type of machine learning where the model is trained on unlabeled data. This means that there are no predefined labels or outputs for the data. The goal of unsupervised learning is to identify patterns and relationships in the data without any prior knowledge of what the data represents.

One common unsupervised learning technique is clustering, where the goal is to group similar data points together based on their similarities. Another technique is dimensionality reduction, where the goal is to reduce the number of features in the data while retaining as much information as possible. Other examples of unsupervised learning include anomaly detection,

where the goal is to identify unusual data points, and association rule learning, where the goal is to find relationships between different variables in the data.

Some popular unsupervised learning algorithms include k-means clustering, principal component analysis (PCA), and autoencoders.

Reinforcement Learning:

Reinforcement learning is a type of machine learning where the model learns to take actions in an environment to maximize a reward signal. The model receives feedback in the form of a reward or penalty for its actions and uses this feedback to adjust its behavior in the future. The goal of reinforcement learning is to find a policy that maximizes the expected cumulative reward over time.

Reinforcement learning is commonly used for game playing, robotics, and autonomous vehicles. In a game playing scenario, the model learns to take actions that lead to winning the game, while avoiding actions that lead to losing. In a robotics or autonomous vehicle scenario, the model learns to navigate its environment to achieve a specific goal, such as reaching a destination or performing a task.

Some popular reinforcement learning algorithms include Q-learning, policy gradients, and actor-critic methods.

Relevance of AI:

Artificial Intelligence's importance and subsequent components have been known for a long time. They are being seen as tools and techniques to make this world better. Its importance lies in making our life easier. These technologies are a great asset to humans and are programmed to minimize human effort as much as possible. They can operate in an automated fashion. Therefore, manual intervention is the last thing that can be sought or seen during the operation of parts involving this technology. These machines speed up your tasks and processes with guaranteed accuracy and precision, making them a useful and valuable tool. Apart from making the world an error-free place with their simple and everyday techniques, these technologies and applications affecting and holds importance for other domains as well.

Important uses of Artificial Intelligence include :

- In Medical Science
- In the Field of Air Transport
- In the field of banking and financial institutions
- In the field of gaming and entertainment
- AI Adds Intelligence to Products

Requirements :

The requirements of AI (Artificial intelligence) can vary depending on the specific application or use case, but here are some general requirements that are often necessary for successful AI implementation:

- **Data:** AI systems require large amounts of high-quality data to learn and improve their performance. The data must be relevant, accurate, and representative of the problem domain.
- **Algorithms:** AI systems require advanced algorithms that can process data and make decisions based on that data. The algorithms must be designed to handle the complexity and variability of the problem domain.
- **Computing power:** AI systems require significant computing power to process large amounts of data and run complex algorithms. This often requires specialized hardware such as GPUs or TPUs.
- **Training:** AI systems require training to learn from data and improve their performance. This training can involve supervised, unsupervised, or reinforcement learning techniques.
- **Human expertise:** This can include domain experts, data scientists, machine learning engineers, and other specialized professionals.
- **Ethics and accountability:** AI systems must be designed and implemented with ethical considerations in mind, such as fairness, transparency, and privacy.

Objective:

The objective of this code is to explore and analyze datasets using the pandas library, train and test machine learning models for regression and classification using the sklearn and TensorFlow libraries, and evaluate the performance of the models using appropriate metrics. Specifically, the code loads the iris dataset and a CSV file into DataFrames, creates and fits a linear regression model to predict the target variable, creates and fits a logistic regression model to classify a binary target variable, and computes the accuracy score for the logistic regression model on a test set. The goal is to gain insights into the relationships between the input and output variables and to build accurate predictive and classification models that can generalize well to new data.

Code :

```
import pandas as pd
import numpy as np
from sklearn import datasets
from sklearn.datasets import load_iris
from sklearn import linear_model
from sklearn.model_selection import train_test_split
```

```

import tensorflow as tf
from tensorflow.keras.datasets import boston_housing
iris=load_iris()
iris
from sklearn.datasets import load_boston
data=pd.read_csv("Data.csv")
df=pd.DataFrame(data)
df
data
x=pd.DataFrame(df.data, columns=df.feature_names)
y=pd.DataFrame(df.target)
x.describe()
reg=linear_model.LinearRegression()
xtrain,xtest,ytrain,ytest=train_test_split(x,y,
test_size=0.25,random_state=102)
reg.fit(xtrain,ytrain)
LinearRegression()
reg.predict(xtest)
x = df.drop('target', axis=1)
y = df['target'].to_frame()
print(x.describe())
reg.predict(xtest.head({}))
ytest[0]
data=pd.read_csv("insurance_data.csv")
data
x = data['age']
y = data[['bought_insurance']]
from sklearn.model_selection import train_test_split
xtrain, xtest, ytrain, ytest = train_test_split(x1,y1,test_size=0.20)
from sklearn import linear_model
from sklearn.linear_model import LogisticRegression
lr = LogisticRegression()
lr.fit(xtrain,ytrain)
LogisticRegression()
lr.predict(xtest)
lr.score(xtest,ytest)
xtest
ytest

```

Description:

Machine learning code is typically written in a programming language such as Python, R, or Julia. The above code is a mix of importing data from different sources and performing various machine learning tasks using different libraries. Here is a brief summary of what code does.


1. Import required libraries such as pandas, numpy, sklearn, and tensorflow.
2. Load iris and Boston housing datasets using the sklearn.datasets module.
3. Read data from a CSV file into a pandas DataFrame.
4. Create a new DataFrame using the data from the CSV file and separate the features (x) and target (y) columns.
5. Split the data into training and test sets using the train_test_split function from sklearn.model_selection.
6. Create a linear regression model using the LinearRegression class from sklearn.linear_model and fit the model to the training data.
7. Use the trained model to make predictions on the test data.
8. Drop the target column from a DataFrame and assign it to a new variable x, and assign the target column to a new variable y.
9. Split the data into training and test sets using train_test_split.
10. Create a logistic regression model using the LogisticRegression class from sklearn.linear_model and fit the model to the training data.
11. Use the trained model to make predictions on the test data and calculate the model's accuracy score.

Conclusion:

In conclusion, Artificial Intelligence (AI) and Machine Learning (ML) are transforming various aspects of society in numerous ways, from healthcare and education to business and transportation. The power of these technologies lies in their ability to analyze vast amounts of data, recognize patterns, and make predictions with a high degree of accuracy. This enables them to automate routine tasks, improve decision-making, and personalize experiences, among other applications.

However, there are also potential risks associated with the use of AI and ML, including issues related to bias, privacy, and job displacement. As society continues to embrace these technologies, it will be important to address these concerns and work towards developing responsible and ethical uses of AI and ML.

Despite these challenges, AI and ML have the potential to revolutionize many fields and have a significant positive impact on society. As such, it is important to continue to invest in research and development in these areas, while also taking proactive steps to ensure that the benefits of these technologies are shared widely and equitably across society.


ABHIRAM K V
AP, CSE