VIT®
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Slot: L21+L22+L51+L52

School of Information Technology and Engineering

Summer-II Semester 2023-2024

Mid-Term

Programme Name & Branch: MCA & Computer Application

Course Name & code: Machine Learning Lab & ITA6016

Class Number (s): VL2022230701060

Faculty Name (s): Dr. ARUN PANDIAN J

Exam Duration: 90 Min. **Maximum Marks: 30**

Answer Any One Question

Question - 1

The Pima Indians Diabetes Dataset involves predicting the onset of diabetes within 5 years in Pima Indians given medical details. It is a binary (2-class) classification problem. The variable names are as follows:

1. Number of times pregnant.
2. Plasma glucose concentration a 2 hours in an oral glucose tolerance test.
3. Diastolic blood pressure (mm Hg).
4. Triceps skinfold thickness (mm).
5. 2-Hour serum insulin (mu U/ml).
6. Body mass index (weight in kg/(height in m)^2).
7. Diabetes pedigree function.
8. Age (years).
9. Class variable (0 or 1).

Use standard machine learning techniques to solve the classification problem. And compare their performance using test accuracy.

Data: https://drive.google.com/file/d/1_gMU5uQmr0PDpxnGiLeTZqDvVxHC9DTE/view?usp=sharing

Question - 2

Develop a classification model for identifying 10 Big Cats of the Wild using custom CNN. The dataset contains 10 classes of wind cat images. The dataset is already split as training, validation and testing set. Develop a CNN model for achieving minimum 90.0% of classification accuracy on the test data.

Data: https://drive.google.com/file/d/1dwws4lf3d6YzAQTj_CCh-vxbNeRgHaYx/view?usp=sharing

Question -3

Simulate three input NAND gate using single layer/Multi-layered perceptron neural network

Input			Output
A	B	C	Y
0	0	0	1
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0