Project Milestones – Neural Network

Criteria	Pts	Week	Topic
Part 1. 1 a - Read the 'Signals.csv' as DataFrame and import required libraries.	2.0 pts	Common part	Data import and Understanding
Part 1.1 b - Check for missing values and print percentage for each attribute.	2.0 pts	Common part	Data import and Understanding
Part 1.1 c - Check for presence of duplicate records in the dataset and impute with appropriate method.	2.0 pts	Common part	Data import and Understanding
Part 1.1 d- Visualise distribution of the target variable.	2.0 pts	Common part	Data import and Understanding
Part 1.1 e- - Share insights from the initial data analysis (at least 2).	2.0 pts	Common part	Data import and Understanding
Part 1.2 a - Split the data into X & Y..	1.0 pts	Common part	Data preprocessing
Part 1.2 b - Split the data into train & test with 70:30 proportion.	1.0 pts	Common part	Data preprocessing
Part 1.2 c - Print shape of all the 4 variables and verify if train and test data is in sync.	1.0 pts	Common part	Data preprocessing
Part 1.2 d - Normalise the train and test data with appropriate method..	2.0 pts	Common part	Data preprocessing
Part 1.2 e - Transform Labels into format acceptable by Neural Network	2.0 pts	Week 2	Data preprocessing
Part 1.3 a - Design a Neural Network to train a classifier.	3.0 pts	Week 3	Model Training & Evaluation using Neural Network
Part 1.3 b - Train the classifier using previously designed Architecture	2.0 pts	Week 3	Model Training & Evaluation using Neural Network
Part 1.3 c - Plot 2 separate visuals. i) Training Loss and Validation Loss ii) Training Accuracy and Validation Accuracy	3.0 pts	Common part	Model Training & Evaluation using Neural Network
Part 1.3 d - Design new architecture/update existing architecture in attempt to improve the performance of the model.	2.0 pts	Week 3	Model Training & Evaluation using Neural Network
Part 1.3 e - Plot visuals as in Q3.C and share insights about difference observed in both the models.	3.0 pts	Common part	Model Training & Evaluation using Neural Network

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Criteria	Pts	Week	Topic
Part 2.1 a - Read the .h5 file and assign to a variable.	2.0 pts	Common part	Data Import and Exploration
Part 2.1 b - Print all the keys from the .h5 file.	1.0 pts	Common part	Data Import and Exploration
Part 2.1 c - Split the data into X_train, X_test, Y_train, Y_test	2.0 pts	Common part	Data Import and Exploration
Part 2.2 a - Print shape of all the 4 data split into x, y, train, test to verify if x & y is in sync..	1.0 pts	Common part	Data Visualisation and preprocessing
Part 2.2 b - Visualise first 10 images in train data and print its corresponding labels..	4.0 pts	Week 2	Data Visualisation and preprocessing
Part 2.2 c - Reshape all the images with appropriate shape update the data in same variable.	3.0 pts	Week 2	Data Visualisation and preprocessing
Part 2.2 d - Normalise the images i.e. Normalise the pixel values.	2.0 pts	Week 2	Data Visualisation and preprocessing
Part 2.2 e - Transform Labels into format acceptable by Neural Network	2.0 pts	Week 2	Data Visualisation and preprocessing
Part 2.2 f - Print total Number of classes in the Dataset.	1.0 pts	Common part	Data Visualisation and preprocessing
Part 2.3 a - Design a Neural Network to train a classifier.	3.0 pts	Week 3	Model Training & Evaluation using Neural Network
Part 2.3 b - Train the classifier using previously designed Architecture (Use best suitable parameters).	3.0 pts	Week 3	Model Training & Evaluation using Neural Network
Part 2.3 c - Evaluate performance of the model with appropriate metrics.	2.0 pts	Week 3	Model Training & Evaluation using Neural Network
Part 2.3 d - Plot the training loss, validation loss vs number of epochs and training accuracy, validation accuracy vs number of epochs plot and write your observations on the same.	4.0 pts	Common part	Model Training & Evaluation using Neural Network