pratical-11-cnn

May 9, 2024

[1]:
```
import tensorflow as tf
from sklearn.model_selection import train_test_split
from sklearn.preprocessing import StandardScaler
from sklearn.datasets import load_breast_cancer

# Load the breast cancer dataset
data = load_breast_cancer()
X_train, X_test, y_train, y_test = train_test_split(data.data, data.target,␣
 ↪test_size=0.2, random_state=42)

# Scale the input features
scaler = StandardScaler()
X_train = scaler.fit_transform(X_train)
X_test = scaler.transform(X_test)

# Build the model
model = tf.keras.models.Sequential([
    tf.keras.layers.Dense(1, activation='sigmoid', input_shape=(X_train.
 ↪shape[1],))
])

# Compile the model
model.compile(optimizer='adam', loss='binary_crossentropy',␣
 ↪metrics=['accuracy'])

# Train the model
model.fit(X_train, y_train, epochs=5)

# Evaluate the model
test_loss, test_accuracy = model.evaluate(X_test, y_test)
print("Accuracy:", test_accuracy)
```

```
Epoch 1/5
```

```
C:\Users\kiran\AppData\Local\Programs\Python\Python310\lib\site-
packages\keras\src\layers\core\dense.py:87: UserWarning: Do not pass an
`input_shape`/`input_dim` argument to a layer. When using Sequential models,
prefer using an `Input(shape)` object as the first layer in the model instead.
```

```
  super().__init__(activity_regularizer=activity_regularizer, **kwargs)
15/15             0s 2ms/step -
accuracy: 0.4239 - loss: 0.8465
Epoch 2/5
15/15             0s 2ms/step -
accuracy: 0.5435 - loss: 0.7251
Epoch 3/5
15/15             0s 1ms/step -
accuracy: 0.6271 - loss: 0.6480
Epoch 4/5
15/15             0s 1ms/step -
accuracy: 0.7223 - loss: 0.5831
Epoch 5/5
15/15             0s 1ms/step -
accuracy: 0.8015 - loss: 0.5209
4/4             0s 2ms/step -
accuracy: 0.7654 - loss: 0.5008
Accuracy: 0.780701756477356
```

[ ]: