Model Development Phase Template

Date	15 October 2024
Team ID	739823
Project Title	Spooky Author Identification Using Deep Learning
Maximum Marks	10 Marks

Initial Model Training Code, Model Validation and Evaluation Report

The initial model training code will be showcased in the future through a screenshot. The model validation and evaluation report will include a summary and training and validation performance metrics for multiple models, presented through respective screenshots.

Initial Model Training Code (5 marks):

```
model.fit( X_train, y_train, validation_data=(X_val, y_val),epochs=10,batch_size=128)
```

Model	Summary	Training and Validation Performanc Metrics

Model Validation and Evaluation Report (5 marks):

Keras

```
# Display the model's architecture
model.summary()
```

Model: "sequential"

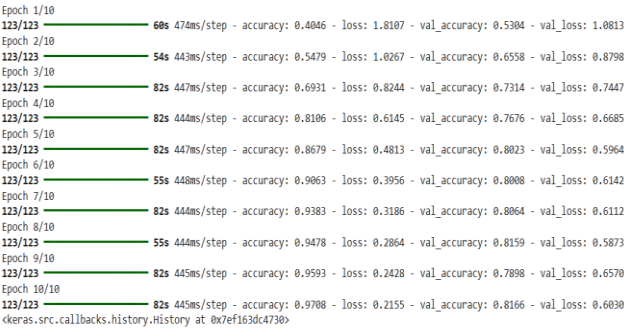| Layer (type)	Output Shape	Param #
embedding (Embedding)	?	0 (unbuilt)
lstm (LSTM)	?	0 (unbuilt)
global_max_pooling1d (GlobalMaxPooling1D)	?	0 (unbuilt)
dense (Dense)	?	0 (unbuilt)
dropout (Dropout)	?	0 (unbuilt)
dense_1 (Dense)	?	0 (unbuilt)

```
Total params: 0 (0.00 B)
Trainable params: 0 (0.00 B)
Non-trainable params: 0 (0.00 B)
```

```
model.summary()
```

Model: "sequential_1"

Layer (type)	Output Shape	Param #
embedding_1 (Embedding)	?	0 (unbuilt)
conv1d (Conv1D)	?	0 (unbuilt)
global_max_pooling1d_1 (GlobalMaxPooling1D)	?	0 (unbuilt)
dense_2 (Dense)	?	0 (unbuilt)
dropout_1 (Dropout)	?	0 (unbuilt)
dense_3 (Dense)	?	0 (unbuilt)

```
Total params: 0 (0.00 B)
Trainable params: 0 (0.00 B)
Non-trainable params: 0 (0.00 B)
```

```
Epoch 1/10
123/123 ──────────── 60s 474ms/step - accuracy: 0.4046 - loss: 1.8107 - val_accuracy: 0.5304 - val_loss: 1.0813
Epoch 2/10
123/123 ──────────── 54s 443ms/step - accuracy: 0.5479 - loss: 1.0267 - val_accuracy: 0.6558 - val_loss: 0.8798
Epoch 3/10
123/123 ──────────── 82s 447ms/step - accuracy: 0.6931 - loss: 0.8244 - val_accuracy: 0.7314 - val_loss: 0.7447
Epoch 4/10
123/123 ──────────── 82s 444ms/step - accuracy: 0.8106 - loss: 0.6145 - val_accuracy: 0.7676 - val_loss: 0.6685
Epoch 5/10
123/123 ──────────── 82s 447ms/step - accuracy: 0.8679 - loss: 0.4813 - val_accuracy: 0.8023 - val_loss: 0.5964
Epoch 6/10
123/123 ──────────── 55s 448ms/step - accuracy: 0.9063 - loss: 0.3956 - val_accuracy: 0.8008 - val_loss: 0.6142
Epoch 7/10
123/123 ──────────── 82s 444ms/step - accuracy: 0.9383 - loss: 0.3186 - val_accuracy: 0.8064 - val_loss: 0.6112
Epoch 8/10
123/123 ──────────── 55s 444ms/step - accuracy: 0.9478 - loss: 0.2864 - val_accuracy: 0.8159 - val_loss: 0.5873
Epoch 9/10
123/123 ──────────── 82s 445ms/step - accuracy: 0.9593 - loss: 0.2428 - val_accuracy: 0.7898 - val_loss: 0.6570
Epoch 10/10
123/123 ──────────── 82s 445ms/step - accuracy: 0.9708 - loss: 0.2155 - val_accuracy: 0.8166 - val_loss: 0.6030
<keras.src.callbacks.history.History at 0x7ef163dc4730>
```

```
model.summary()
```

Model: "sequential_2"

Layer (type)	Output Shape	Param #
embedding_2 (Embedding)	?	0 (unbuilt)
conv1d_1 (Conv1D)	?	0 (unbuilt)
global_max_pooling1d_2 (GlobalMaxPooling1D)	?	0 (unbuilt)
dense_4 (Dense)	?	0 (unbuilt)
dropout_2 (Dropout)	?	0 (unbuilt)
dense_5 (Dense)	?	0 (unbuilt)

Total params: 0 (0.00 B)
Trainable params: 0 (0.00 B)
Non-trainable params: 0 (0.00 B)