# Model Architecture Description

## 1. Input and Dense Layers

The model starts with a Dense layer:  
- Units: 128 neurons.  
- Activation Function: Likely ReLU.  
- Trainable Parameters: 2,688.  
- This layer extracts high-dimensional features from the input data.

## 2. Dropout Layer

A Dropout Layer follows:  
- Purpose: Prevents overfitting by randomly setting some neuron activations to zero.  
- Rate: Likely 0.2–0.5.

## 3. Second Dense Layer

Another Dense layer:  
- Units: 64 neurons.  
- Activation Function: Similar to the first Dense layer.  
- Trainable Parameters: 8,256.

## 4. Second Dropout Layer

Another Dropout Layer:  
- Functions identically to the first, further reducing overfitting.

## 5. Third Dense Layer

A third Dense layer:  
- Units: 32 neurons.  
- Trainable Parameters: 2,080.  
- Further reduces the dimensionality of the extracted features.

## 6. Third Dropout Layer

A third Dropout Layer:  
- Ensures robustness and generalization.

## 7. Final Dense Layer

The final Dense layer:  
- Units: 1 neuron.  
- Activation Function: Likely Sigmoid or Linear.  
- Trainable Parameters: 33.

## Model Summary

- Total Parameters: 13,057.  
- Trainable Parameters: 13,057.  
- Non-trainable Parameters: 0.  
- The architecture is compact, making it suitable for small datasets or lightweight applications.

## Key Features

- Dropout Layers: Strategically placed after each Dense layer to combat overfitting.  
- Dense Layers: Gradual reduction in neuron count to distill features and prepare for binary or scalar output.