**Celebrities Prediction**

1. **Chosen Model**

Convolutional Neural Network (CNN)

**Architecture**

* The input layer is designed to process images with dimensions of (128, 128, 3).
* A convolutional layer is employed, consisting of 32 filters with a kernel size of (3, 3), and utilizes the Rectified Linear Unit (ReLU) activation function.
* A max-pooling layer is applied to reduce spatial dimensions.
* The flattened layer transforms the 2D matrix data into a vector.
* Two dense layers follow, both using ReLU activation. One of these layers incorporates dropout (0.1) to prevent overfitting. The final dense layer uses softmax activation for multi-class classification.
* Compilation uses Adam optimizer, and it is a categorical variable and uses the spare categorical crossentropy.

**2. Training and Validation:**

* Processes and reads images from a designated directory, generating a dataset alongside corresponding labels. Rescales the images to dimensions of (128, 128) pixels and standardizes pixel values.
* Split the dataset into training datasets and testing datasets with 70% training and 30% testing data.
* Training the model by 240 epochs and with a batch size of 128. And a validation split of 0.1(10%) for analysis of the model performance during the training.
* After training the model, the visualization is done. Accuracy plots and loss over epochs are plotted and saved for both training and validation sets.

**3. Critical findings**

* The model's growth over epochs on both the training and validation sets is displayed in the accuracy plot. The loss plot shows the model's convergence throughout training of the data.
* The trained model was evaluated on a test data set, and the accuracy of the model was 86.27.