



Gender Classification

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Problem

Sometimes the police have the witness description of the criminal but they do not know whether he/she is a male or female so they cannot reduce the search area.

Solution

In this project, we will develop a classification model to predict the gender of the criminal according to the description we got from the witness. Which will help the police to search for the criminal.

Dataset

The dataset we will use contains the witness description, The data are taken from the [Gender Classification Dataset](#) from Kaggle The following table explains the dataset in detail:

| Column | Data type |
|---------------------------|---|
| long_hair | Integer (0 or 1), indicates whether this person has long hair or not. |
| forehead_width | Integer, the width of the forehead from right to left given in cm. |
| forehead_height | Integer, the width of the forehead width in cm |
| nose_wide | Integer (0 or 1), whether the nose is wide or not |
| nose_long | Integer (0 or 1), whether the nose is long or not |
| lips_thin | Integer (0 or 1), whether this person has a thin lip or not |
| distance_nose_to_lip_long | Integer (0 or 1), is the distance from nose to lip is long |
| gender | String, either Male or Female |

Features

We will use five models to find the best model Logistic Regression Model, which is the best for binary classification, Decision Tree, Support Vector, Random Forest Classifier, KNN.

Tools

To grab the data and build the model we will use the following tools:

| Tool | Description |
|------------------|---|
| Jupyter notebook | Contains cells of Python code and human-readable text |
| pandas | The library is written in Python for data manipulation and analysis |
| sklearn | Software machine learning library for the Python programming language |
| Matplotlib | Matplotlib is a plotting library for Python |

Conclusion

We expect the model will predict the gender of the criminal after receiving the description from the witness. The model will help the police to reduce the search area.