



Face Shape Recognition

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GUIDE:-
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Abstract

Face shape recognition is a technology that aims to identify and classify the shape of a person's face. The objective of this project is to provide an overview of face shape recognition, its challenges, and the technology used.

Problem Statement

The diversity in human face shapes poses a challenge in accurately recognizing and classifying them. Manual face shape recognition is time-consuming and prone to errors. There is a need for an automated system that can analyze and categorize face shapes quickly and accurately.

AIM:-

The aim of face shape recognition is to develop a technology that can identify and classify different types of face shapes.

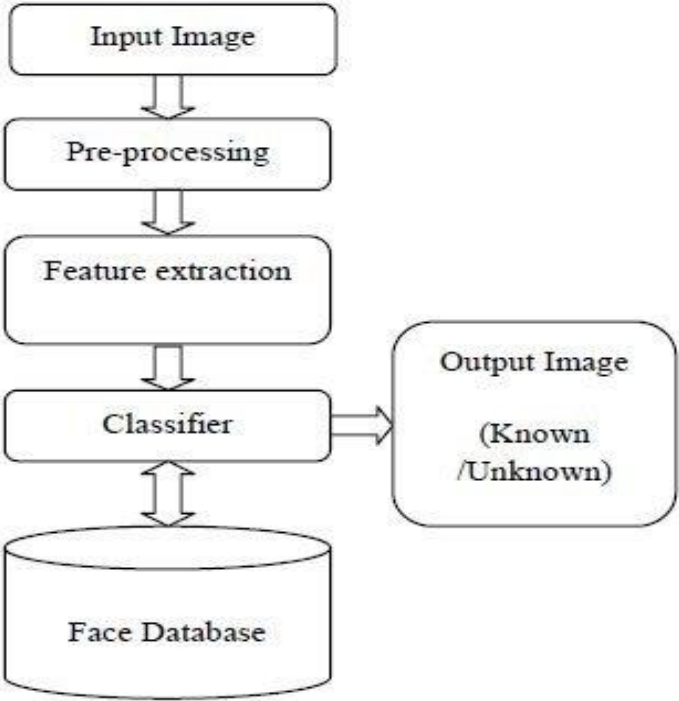
OBJECTIVES:-

- Develop algorithms for detecting and extracting facial landmarks to determine face shape.
- Implement machine learning techniques to train models for accurate face shape classification.
- Evaluate the performance and accuracy of the face shape recognition system through extensive testing.

Proposed Solution

- Utilize deep learning algorithms to train a neural network model that can accurately classify and identify different face shapes.
- Gather a diverse dataset of labeled face images representing various face shapes to ensure the model's robustness and accuracy.
- Implement a pre-processing step to normalize and align face images, ensuring consistent positioning and minimizing variations in lighting conditions.

System Architecture



System Deployment Approach



Face Detection

Used advanced algorithms to detect faces in images or videos.



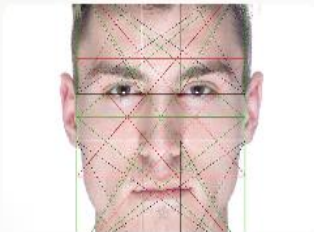
Model Training

Train the face shape recognition model using large datasets.



Real-Time Recognition

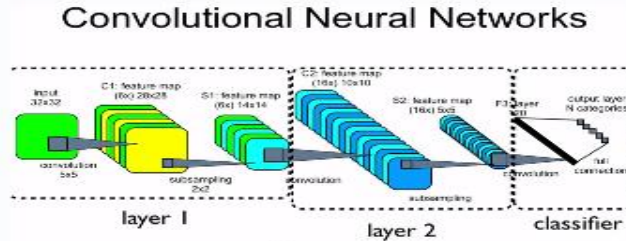
Implementing the system for live face shape recognition in various applications.



Shape Analysis

Generate insights by analyzing face shape data and its correlations with other attributes.

Algorithm & Deployment



Convolutional Neural Networks (CNN)

CNNs leverage deep learning techniques to automatically learn and recognize complex patterns in face images, allowing for precise face shape recognition.

Conclusion

- Face shape recognition is an essential technology with numerous applications in various domains.
- Despite the challenges posed by diverse face shapes, advancements in computer vision and machine learning have made accurate recognition achievable.
- Further research and development in this field are crucial to improve the performance and reliability of face shape recognition systems.

Future Scope

- **Improved Accuracy:** Advancements in machine learning and computer vision will lead to more accurate face shape recognition.
- **Real-Time Applications:** Face shape recognition will become faster, enabling real-time analysis and response.
- **Integration with Other Technologies:** Face shape recognition can be integrated with augmented reality and wearable devices for enhanced user experiences.

Reference

- [Zhang, H., & Tang, Y.](#) (2019). A Deep Learning Approach for Face Shape Classification. In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition ([CVPR](#)).
- [Liu, W., Anguelov, D., & Erhan, D.](#) (2019). 3D Face Shapes Recognition Using Convolutional Neural Networks. In Proceedings of the European Conference on Computer Vision ([ECCV](#)).
- [Shen, S., & Zafeiriou, S.](#) (2020). Face Shape Classification with 3D Morphable Models. In Proceedings of the IEEE International Conference on Computer Vision ([ICCV](#))

Face Shape Finder | Kaggle

kaggle.com/code/kapusukanya/face-shape-finder/edit

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Draft Session (43m)

```
[134]:  
# This Python 3 environment comes with many helpful analytics libraries installed  
# It is defined by the kaggle/python Docker image: https://github.com/kaggle/docker  
# For example, here's several helpful packages to load  
  
import numpy as np # linear algebra  
import pandas as pd # data processing, CSV file I/O (e.g. pd.read_csv)  
  
# Input data files are available in the read-only "../input/" directory  
# For example, running this (by clicking run or pressing Shift+Enter) will list all files in the input directory  
  
import os  
for dirname, __, filenames in os.walk('/kaggle/input'):  
    for filename in filenames:  
        print(os.path.join(dirname, filename))  
  
# You can write up to 28GB to the current directory (/kaggle/working/) that gets preserved as output when you create a run  
# You can also write temporary files to /kaggle/temp/, but they won't be saved outside of the current session
```

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Thank you!