Final Year Project Report

Race Classification through Convolutional Neural Network

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DEDICATION

We would like to dedicate this project to our family, friends and especially to our teachers, whose encouragement and support helps us to complete this task. Were unable to do this task but hard work of our respectable teachers helps us to complete this project.

Final Approval

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ABSTRACT

Neural networks are a powerful technology to classify different images. However, there are impressive number of different types of neural networks that are used in the literature and in industry but we used Convolutional neural network (CNN) to classify the images. The biometric framework can utilize race to distinguish individuals in the world with a precise personality. This research proposes a design to order individuals into two races Asian and Non-Asian that effectively in any face acknowledgment framework can be incorporated. The proposed procedure takes in the assigned essential characteristic of the face, skin color pattern and other secondary feature from training of images in order to effectively classify races. We use CNN to create a system that classifies facial images that are based on a variety of different facial attributes and classify it into two separate classes. We use 3 convolutional layers. We used 3052 training images of 64*64 pixels and we achieve 85% accuracy.

CONTENTS

DEFINITIONS AND ACRONYMS

Acronym	Definition
BIF	Biological Inspired Features
CNN	Convolutional Neural Network
DBMs	Deep Boltzmann Machine
ICA	Independent Component Analysis
LBP	Local Binary Patterns
LDA	Linear Discriminant Analysis
LFW	Labeled Face in Wild
MAE	Mean Absolute Error
PCA	Principle component Analysis
RDMs	Restricted Boltzmann Machine
SVM	Support Vector Machine
WLD	Weber Local Descriptor

LIST OF FIGURES

LIST OF TABLES

1 INTRODUCTION

Faces express the abundance of social signs, including race, age and sexual orientation, all of which have included expanding responsiveness from multidimensional research, such as neuroscience and software engineering. Race grouping is trying because of its instability and many-sided quality relying upon point of view and criteria. To address this test, as of late, critical battles have been communicated toward race discovery and arrangement in the group. This Research gives a far reaching and investigative survey of the up and coming advances in face-race observation, standards, calculations, and applications. For the examination purposes, it virtues highlighting a few vital purposes of arrangement that have risen up out of psychological research conventions: Perhaps the most visible, yet wrongly comprehended part of race is the basic trap of mistaking race for skin shading. Our exploration is on Asian and non-Asian grouping framework.