NATIONAL INSTITUTE OF TECHNOLOGY HAMIRPUR (H.P.)

CANDIDATES' DECLARATION

We hereby certify that the work which is being presented in the project report titled **"Face Recognizer App"** in partial fulfilment of the requirements for the award of the Degree of Bachelor of Technology and submitted to the Department of Computer Science & Engineering, National Institute of Technology Hamirpur, is an authentic record of our own work carried out during a period from August 2016 to December 2016, under the supervision of **Er. Rajeev Kumar**, Assistant Professor, Department of Computer Science & Engineering, National Institute of Technology Hamirpur.

The matter presented in this project report has not been submitted by us for the award of any other degree of this or any other Institute/University.

Akshay Sharma	Suleman Khan	Vetta Chaudhary	Neelkamal
(13507)	(13521)	(13535)	(13556)

This is to certify that the above statements made by the candidates are correct to the best of my knowledge.

Date: **Er. Rajeev Kumar**

(Project Supervisor)

The project Viva-Voce examination was held on 15,December 2016

Signature of Supervisor **Signature of Project Coordinator**

ACKNOWLEDGEMENT

We consider ourselves privileged to express gratitude and respect towards all those who guided us through this project. It is with our hearty gratitude that we acknowledge their contributions to this project.

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We are very grateful to our parents for their love, prayers, care and sacrifices, which they have done for us. Their blessings are the reason due to which we have been able to reach here. Finally, our acknowledgements go to all the people who have supported us to complete this project directly or indirectly.

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ABSTRACT

In recent years, the biometrics has achieved a great attention on a world level. A Biometric System operates by getting biometric information from a personal that extracts a feature set from the data which is acquired, and helps in comparing this feature set against the template stored in the database. There are biometric technologies which could either be physiological or behavioural. Face Recognition is having the importance to provide biometric authentication with easy image acquisition that can be used for online and offline applications. There are number of existing approaches for biometric facial recognition and classification.

This report presents most of the algorithms present for the face detection and recognition. We used the android API, after a long study of the android literature, to make this application. We used the OpenCV library, a library created for image processing.

Our concentration is mainly on deploying the face recognition application on the ANDROID phone. FaceDetector class provided by the Android's API is used for face detection and FaceRecognizer class provided by the Android's API is used for face recognition. The main idea was to split the tasks between the server and client with the complex training done on the server and testing done on android (client) which is not implement yet due to various constraints.

This report presents detailed information about all the technologies, languages used and implementation details of our project.

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LIST OF ABBREVIATIONS

Abbreviation	Expansion
OpenCV	Open Source Computer Vision Library
App	Application / Application Portability Profile
XML	eXtensible Markup Language
RGB	Red, Green, Blue
HIS	hue (H), intensity (I), saturation (S)
FFT	Fast Fourier transform
IFFT	Inverse Fast Fourier transform
ROI	Region Of Interest
PCA	Principal Component Analysis
LDA	Linear Discriminant Analysis
SVM	Support Vector Machine
SIFT	Scale-invariant feature transform
DoG	Difference of Gaussians
XHTML	Extensible Hypertext Markup Language
IDE	Integrated Development Environment
APK	Android application package
NDK	Native Development Kit
UI	User Interface
VCS	Version Control Systems
CVS	Concurrent Versions System
SDK	Software Development Kit
LBPH	Local Binary Patterns Histograms