CANDIDATE'S DECLARATION

We hereby declare that the work presented in this report entitled "Emotion Recognition for Real-Time Feedback" in fulfilment of the requirements for the award of Bachelor of Technology with specialization in Computer Science and Engineering, submitted to National Institute of Technology, Jalandhar is an authentic record of our own work carried out during the period,
August 2018 to May 2019 under the supervision of Dr.Nonita Sharma and Mr. Rahul Aggarwal, Assistant Professors of Department of Computer Science & Engineering, National Institute of Technology, Jalandhar.

We have not submitted the matter presented in this report to any other university or institute for the award of any degree or for any other purpose.

Date: 29 May, 2019

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This is to certify that the declaration submitted by the above candidates is correct and true to best of our knowledge, further it is recommended for external evaluation.

(Mentor)	(Mentor)
Dr.Nonita Sharma	Mr. Rahul Aggarwal
Assistant Professor	Assistant Professor

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Shelly

Himakshi Salhotra

Shubham Mittal

Shanuj Shekhar

ABSTRACT

This project titled “Emotion Recognition for Real-Time Feedback” performs facial expression analysis in near real-time from a live webcam feed. It classifies human expressions into 8 different classes (Happy, Sad, Angry, Contempt, Disgust, Fear, Surprise, and Neutral). Facial detection is carried out to obtain facial expression using an in-built python library followed by training of Support Vector Machine model. To solve this multi-class problem, Support Vector Machine uses several tuning parameters such as kernels, gamma and regularization. This model is trained on the dataset which comprises of 10,708 images. SVM model obtained an accuracy of 78% against testing dataset when Sampling techniques were used to train the model. To further improve the accuracy, Ensembling techniques were used. The real time accuracy achieved is 67%.

Based on this project we have developed two working applications for obtaining real-time feedback. The first application detects the genre of the song with the help of facial expression of the end-user while he/she is listening to song. The other application interprets the category of news by reading the facial expression of the user. Both these applications give us genuine real-time feedback.

TABLE OF CONTENTS

LIST OF FIGURES