Object Sound Recognition

**Tahir Siddique**

**Sohail Amjad**



DEPARTMENT OF COMPUTER SCIENCES

COMSATS UNIVERSITY ISLAMABAD, VEHARI CAMPUS

VEHARI – PAKISTAN

SESSION 2018-2022

Object Sound Recognition

*Undertaken By:*

**Tahir Siddique**

Reg. No. CIIT/Fa18-BSE-036/Vhr

**Sohail Amjad**

Reg. No. CIIT/Fa18-BSE-063/Vhr

*Supervised By:*

**Jawad Rafeeq**



A DISSERTATION SUBMITTED AS A PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF BACHELORS IN COMPUTER SCIENCE / SOFTWARE ENGINEERING

DEPARTMENT OF COMPUTER SCIENCES

COMSATS UNIVESITY ISLAMABAD, VEHARI CAMPUS

VEHARI – PAKISTAN

SESSION 2018-2022

**CERTIFICATE OF APPROVAL**

It is to certify that the final year project of BS (SE) “Object Sound Recognition” was developed by

**Tahir Siddique (CIIT/FA18-BSE-036/VHR)** and **Sohail Amjad**

**(CIIT/FA18-BSE-063/VHR)** under the supervision of “Jawad Rafeeq” and that in his opinion; it is fully adequate, in scope and quality for the degree of Bachelors of Science in Computer Sciences.

---------------------------------------

**Supervisor**

---------------------------------------

**External Examiner**

---------------------------------------

**Head of Department**

**(Department of Computer Science)**

**DEDICATION**

To my Loving Parents and respected Teachers.

**ACKNOWLEDGEMENT**

All praise to almighty Allah alone, the omnipotent, the most compassionate. We would like to thank God for blessing us with the strength, intelligence, and patience to complete this project.

We feel great pleasure in expressing our heartiest gratitude to our honorable teacher “Muhammad Jawad Rafiq Lecturer COMSATS University Islamabad, Vehari campus, Vehari, for king behavior, valuable suggestion, worth and keen supervision, sympathetic attitude towards completion of project. We express our sincere thanks to all respectable teachers, friends and faculty members of computer science department of COMSATS University Islamabad, Vehari campus.

We would also like to thank our families for their love and support. Prayers of our families are treasure for our life.

**PROJECT BRIEF**

PROJECT NAME Object Sound Recognition

ORGANIZATION NAME Comsats University Islamabad Vehari Campus

UNDERTAKEN BY Tahir Siddique and Sohail Amjad

SUPERVISED BY Jawad Rafeeq

Comsats University Islamabad Vehari Campus

Computer Science

Comsats University Islamabad Vehari Campus

Started On 30 November

Completed On 28 December

COMPUTER USED Dell

SOURCE LANGUAGE Python 3.10, C#

OPERATING SYSTEM Ubuntu, Windows 10

TOOLS USED Spyder

**ABSTRACT**

In every aspect of human life, sound plays an important role. From personal security to critical surveillance, a sound is a key element to develop automated systems for these fields. Few systems are already in the market but their efficiency is a concerned point for their implementation in real life scenarios. The learning capabilities of Deep learning architectures can be used to develop sound classification systems to overcome efficiency issues of traditional systems. Our aim is to use deep learning networks for classifying environmental sounds based on the generated spectrograms of these sounds. We will use spectrogram images of environmental sounds to train Convolutional Neural Network. To train and test CNN we will use Urban8kSounds Dataset.