RESEARCH TITLE (Font Size 24 Bold)

Research Project I (50XXXX-3)

A MSc Research Project submitted as partial fulfillment To:

Graduate Studies Committee

College of Computers and Information Technology, Taif University

Advisor:

Student Name:

September 2024

Evaluation Committee

MEMBER NAME	ROLE	DATE	SIGNATURE
	Advisor Examiner 1 Examiner 2		

Graduate Studies Committee Chair——————— **Signature:**

College of Computers and Information Technology

Taif University, KSA.

Students Anti-Plagiarism Statement

I hereby declare this report is my own work except for properly referenced quotations, and contains no plagiarism; it has not been submitted previously for any other assessed unit on this or other degree courses.

I have read and understood the School's rules on assessment offences which are available in the Taif University Handbook

Author:

Name	Signature:	Date:
Student's Name		3/10/2024

Dedication

This work is dedicated to my dear ——

Abstract in English

The abstract is a summary of the report. The abstract determines whether someone will read your report or not. It should include a justification for the study, approach, experiment, results, and conclusion. Students are encouraged to write the abstract at last. The abstract is about (150-250 words. The abstract should not include new information, figure, and/or references.

Keywords— Includes at least 5 keywords or phrases.

Abstract in Arabic

Table of Contents

List of Tables

List of Figures

Chapter 1 | Introduction

This chapter should contain the following points.

This chapter should introduce research background specific to the topic, Justification of the topic and the topic is important related to the field? Concise literature review highlighting the research novelty. Clearly define the problem statements, aims and objectives. Also, discuss the benefits of the Kingdom of Saudi Arabia. This chapter also briefly discuss the research methodological and approach. Finally, discuss the structure of the report.

1.1 Context

Recent and significant improvements in biometric techniques [1] have supplanted conventional authentication methods, such as passwords, cards, and tokens, over the past few decades. These systems have facilitated more secure, automated authentication based on physical and behavioral traits.

1.2 Problem Statement

To provide solutions to the problem mentioned, this project is proposed to....

1.3 Aims and Objectives

In this project, we aim to achieve the following objectives:

- To analyze the current state of the need to ...
- To collect data and information regarding...

Week	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W1	W13	W14	W15
Discuss ideas														
Idea selection														
Search for the idea														
Preparing Methodology														
Preparing and review Proposal														
Project analysis														
Finalize the project														

Figure 1.1: Activity Plan for the Research

1.4 Benefits

By the end of this project, we expect to obtain the following benefits:

- For facilitating...
- For keeping track of...
- For assisting...

1.5 Contributions/Significance of the Project

....

1.6 Activity Plan

Figure 1.1 shows the detailed activity plan for our research in one academic year starting from analysis phase and ending with the testing and evaluation phase.

1.7 Summary of the remaining chapters

This report is organized into four chapters, which can be briefly summarized as follows.

- Chapter 1 provides a general introduction to ..... It also outlines the motivations, objectives, and the structure of the report.
- Chapter 2 gives a comprehensive overview of ....., including a review of the relevant literature. The chapter also details the publicly available datasets used in the literature.
- Chapter 3 describes the design of the proposed model, including further details of the hardware and software used to conduct the experiments. This chapter also provides details about the datasets used in the study.
- Chapter 4 provides an explanation of .....
- Chapter 5 concludes the overall research and the proposed methodology, including recommendations and future works.

.

Chapter 2 | Literature Review

2.1 Introduction

Give a summary of chapter content ....

2.2 Summary of Related Works

This chapter should discuss elaborately the previous works related to the research. Also should compare with the proposed idea. Should focus on most recent work related to the research topic. The literature review is an evaluation of how this research has informed your own unique research.

- Demonstrate how the different pieces of research fit together. Are there overlapping theories? Are there disagreements between researchers?
- Highlight the gap in the research. This is key, as a dissertation is mostly about developing your own unique research. Is there an unexplored avenue of research? Has existing research failed to disprove a particular theory?
- Back up your methodology. Demonstrate why your methodology is appropriate by discussing where it has been used successfully in other research.

2.3 Comparison of Related Works

2.4 Summary

Table 2.1: Comparison with the state of the art

Year	*Methodology*	*Dataset*	*Results*
2022			
2024			
....			

Chapter 3 | Research Methodology

Summary of the chapter and short introduction to the next chapter.

3.1 Introduction

In this chapter, you need to address two critical questions:

1. Exactly HOW will you carry out your research (i.e. what is your intended research design)?
2. Exactly WHY have you chosen to do things this way (i.e. how do you justify your design)?

So, in this chapter you will have the following topics:

- Description of research design and methods used
- Identification of data sources and sampling techniques used

3.2 Proposed Model

...

3.3 Summary

Chapter 4 | Requirements Analysis

4.1 Introduction

...

4.2 Database

.....

4.3 Evaluation Metrics

...

4.4 Summary

.....

Chapter 5 | Conclusion and Future Works

5.1 Conclusions

In this research, ...

5.2 Recommendations and Future Works

.....

References

[1] J. Galbally, S. Marcel, and J. Fierrez, "Biometric antispoofing methods: A survey in face recognition," *IEEE Access*, vol. 2, pp. 1530–1552, 2014.

Chapter A | Code Samples

A.0.1 Libraries

```
import torch
import numpy as np
from torch.utils.data import Dataset
import cv2
from skimage.transform import resize
import torch.nn as nn
import torch.nn.functional as F
import cv2
import glob
from PIL import Image
import matplotlib.pyplot as plt
from scipy.signal import butter, lfilter, get_window
import torchvision.models as models
```

A.0.2 Frames Extraction and Pre-processing

```
    def extract_faces_frames(video_file,timesep,h,w):
    face_cascade = cv2.CascadeClassifier(cv2.data.haarcascades + '
   haarcascade_frontalface_default.xml')
    vid_capture = cv2.VideoCapture(video_file)

    frames = []
    frames_count = 0
    while vid_capture.isOpened():
        return_TF, saved_frames = vid_capture.read()
        if not return_TF:
            break
        saved_frames = enhance_image(saved_frames)
```

```
12          gray = cv2.cvtColor(saved_frames, cv2.COLOR_BGR2GRAY)
13          faces = face_cascade.detectMultiScale(gray, scaleFactor=1.1,
    minNeighbors=5)
14          for i, (x, y, width, height) in enumerate(faces):
15              # Extract ROI
16              if frames_count == timesep:
17                break
18              roi = saved_frames[y:y+height, x:x+width]
19              roi = cv2.resize(roi,(h,w))
20              frames.append(roi)
21              frames_count+=1
22
23     vid_capture.release()
24     return frames
```