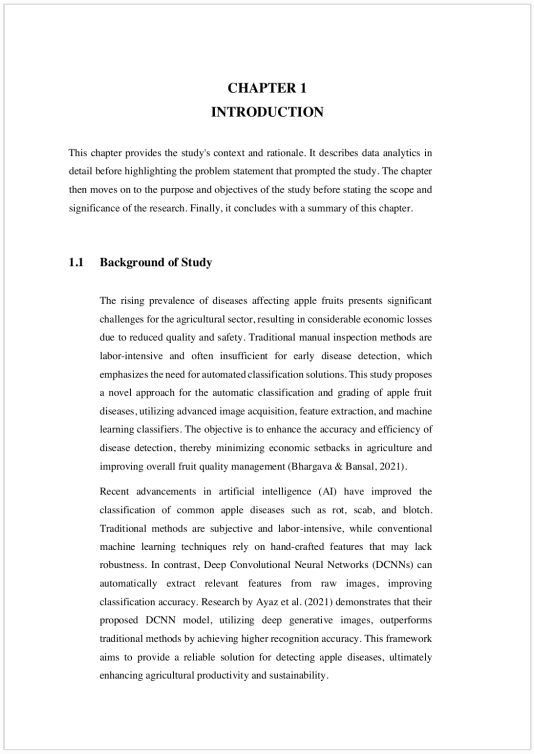
Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

The first page of your submissions is displayed below.

Submission author:	kamal aizat
Assignment title:	Submit
Submission title:	thesis draft
File name:	Thesis_Final_Draft.pdf
File size:	2.07M
Page count:	104
Word count:	14,888
Character count:	86,438
Submission date:	17-Jan-2025 08:35PM (UTC+0700)
Submission ID:	2565917169



CHAPTER 1
INTRODUCTION

This chapter provides the study's context and rationale. It describes data analytics in detail before highlighting the problem statement that prompted the study. The chapter then moves on to the purpose and objectives of the study before stating the scope and significance of the research. Finally, it concludes with a summary of this chapter.

1.1 Background of Study

The rising prevalence of diseases affecting apple fruits presents significant challenges for the agricultural sector, resulting in considerable economic losses due to reduced quality and safety. Traditional manual inspection methods are labor-intensive and often insufficient for early disease detection, which emphasizes the need for automated classification solutions. This study proposes a novel approach for the automatic classification and grading of apple fruit diseases, utilizing advanced image acquisition, feature extraction, and machine learning classifiers. The objective is to enhance the accuracy and efficiency of disease detection, thereby minimizing economic setbacks in agriculture and improving overall fruit quality management (Bhargava & Bansal, 2021).

Recent advancements in artificial intelligence (AI) have improved the classification of common apple diseases such as rot, scab, and blotch. Traditional methods are subjective and labor-intensive, while conventional machine learning techniques rely on hand-crafted features that may lack robustness. In contrast, Deep Convolutional Neural Networks (DCNNs) can automatically extract relevant features from raw images, improving classification accuracy. Research by Ayaz et al. (2021) demonstrates that their proposed DCNN model, utilizing deep generative images, outperforms traditional methods by achieving higher recognition accuracy. This framework aims to provide a reliable solution for detecting apple diseases, ultimately enhancing agricultural productivity and sustainability.