

**Project Proposal**

Artificial Intelligence

AI 2002

**Submitted By:**

Afroze Ali 21L-5314

Haseeb Ahmed 21L-5345

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**Problem Statement:** Detection of Warped Images

**Introduction:**

Image warping, also known as image distortion, is a common issue in image processing where the shape or appearance of an object within an image is altered. This distortion can occur due to various factors such as camera lens distortion, perspective changes, or intentional manipulation.

**Problem Description:**

The detection of warped images is crucial in many applications, including computer vision, medical imaging, and quality control. Detecting warped images helps ensure the integrity and accuracy of visual data used in these applications.

**Project Goal:**

The goal of this project is to develop an AI-based solution for automatically detecting warped images. The solution should be able to analyze an input image and determine whether it has undergone any form of warping or distortion.

**Importance:**

1. Quality Assurance: In industries like manufacturing and healthcare, ensuring the integrity of images is critical for maintaining quality standards.
2. Data Integrity: In fields like forensics and surveillance, detecting image tampering or manipulation is crucial for maintaining the integrity of evidence.
3. Efficiency: Automating the detection process can save time and resources compared to manual inspection, especially when dealing with large volumes of images.

**Proposed Solution:**

The proposed solution will leverage machine learning algorithms, particularly convolutional neural networks (CNNs), to learn patterns associated with warped images. The model will be trained on a dataset of both warped and non-warped images to enable it to accurately classify new images.

**Dataset:**

The dataset used for this project can be found on Kaggle at the following link:

https://www.kaggle.com/xxc025