
COSE474-2024F: Final Project Proposal

“CLIP ”

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1. Introduction

1.1. Motivation

With the rapid advancements in generative adversarial networks (GANs), synthetic images are becoming increasingly indistinguishable from real-world images. While these advancements provide new opportunities in content creation, they also introduce challenges in identifying AI-generated images, particularly in contexts where authenticity is critical, such as journalism, social media, and security.

1.2. Problem Definition

1.3. Concise description of Contribution

2. Related Works

3. methods

3.1. Significance and Novelty

3.2. figure

3.3. reproducibility-algorithm

4. Experiments

4.1. Datasets

The *CIFAKE* dataset, designed as a benchmark for distinguishing between AI-generated and real images, consists of 20,000 images (32x32 pixels) evenly split into 10,000 synthetic (FAKE) and 10,000 real (REAL) samples. The real images are derived from the CIFAR-10 dataset, representing real-world objects across ten classes, such as airplanes, cats, and cars (Krizhevsky & Hinton, 2009). In contrast, the synthetic images are generated using AI(Stable Diffusion Version 1.4) (Bird & Lotfi, 2023). The dataset is further divided into 16,000 training and 4,000 test samples, providing a standardized format for evaluating binary classification models. CIFAKE serves as a valuable resource for tasks involving GAN evaluation, and the detection of AI-generated images.

4.2. Computer Resource Experimental Design

4.3. Quantitative Results

4.4. Qualitative Results

4.5. Analysis

4.6. Discussion

5. Future Direction

References

Bird, J. and Lotfi, A. Cifake: Image classification and explainable identification of ai-generated synthetic images. *arXiv preprint arXiv:2303.14126*, 2023.

Krizhevsky, A. and Hinton, G. Learning multiple layers of features from tiny images. 2009.