Week 11: Summer Internship

Tasks

The main task in this week is extensive reading of existing research papers on profiling cloning, feature matching etc.

The papers covers the following points:

- Establishing relevance of profile cloning and problem of fake image detection.
- Creation and detection techniques like morphing, deep fakes etc.
- Extracting original from deep fakes once source database is known.

Paper-1

Link: https://arxiv.org/pdf/1909.11573.pdf

It was a survey based research paper talking about using deep learning for deep fakes creation and detection.

- Established the past developments and importance of the area.
- Listed major code repositories having deep learning models for creation and detection.
- More oriented towards deep learning and talks about GAN and CNN models.

Paper-2

Link: https://arxiv.org/pdf/1909.04217v1.pdf

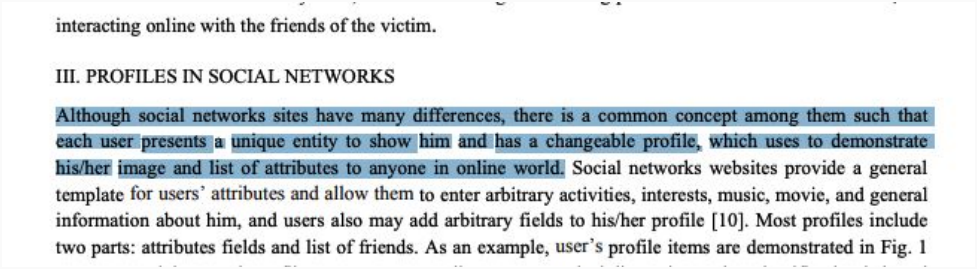
This paper deals with detection of swapped faces which we used as a method of fake image creation.

- Has a dataset of swapped face images.
- Has an algorithm that uses hamming distance (similar to our algorithm -2

Paper-3

Link: https://arxiv.org/pdf/1909.04217v1.pdf

This paper talks about profile cloning from aspects different from images. But it does recognise the relevance of images in fake profile generation.



interacting online with the friends of the victim.

III. PROFILES IN SOCIAL NETWORKS

Although social networks sites have many differences, there is a common concept among them such that each user presents a unique entity to show him and has a changeable profile, which uses to demonstrate his/her image and list of attributes to anyone in online world. Social networks websites provide a general template for users' attributes and allow them to enter arbitrary activities, interests, music, movie, and general information about him, and users also may add arbitrary fields to his/her profile [10]. Most profiles include two parts: attributes fields and list of friends. As an example, user's profile items are demonstrated in Fig. 1

Paper-4

Link: https://www.cs.ubc.ca/~lowe/papers/ijcv04.pdf

This is the famous paper authored by D Lowe. The algorithm 2 & 3 (non-brute force) is based on this research paper.

- This includes the detailed explanation of mathematical tools and logical reasoning used in the algorithm.
- It talks about important features of the image and accurate keypoint localisation.

Paper-5

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