B14 Cell Phone Images in Social Media

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After attending this presentation, attendees will understand how to differentiate images originating from different cell phones. Furthermore, attendees will be able to differentiate images when they have been uploaded to a social media website.

This presentation will impact the forensic science community by providing a tool for law enforcement to track the origin of cell phone images posted to social media websites including Facebook®, MySpace, and Twitter®. This presentation will seek to eliminate the mystery that has surrounded images uploaded to the Internet.

Social networking websites have become a group depository of personal photos for all to see. The public availability of these images provides evidence otherwise unavailable to law enforcement; however, this valuable investigative tool comes with its drawbacks.

Very little is known about images uploaded to social networking websites. Previous successful research has been done into the usefulness of artifacts left by social networking websites, but no known research has dealt with uploaded images.[1] Currently, images uploaded to social networking websites cannot be traced back to their origin. This presentation will provide a tool to track the origin of cell phone images posted to social media websites.

Traditional eyewitnessing of crimes is being replaced by video and image recordings. Today, almost everyone owns a cell phone and crimes are being increasingly captured on cell phone cameras. Unlike the traditional camera, people always carry their cell phones, and they are becoming increasingly user friendly.

As society is technologically evolving, evidence of crimes is increasingly posted to social networking websites. Investigators must determine where cell phone photos that find their way onto social networking websites originated. Investigators need to be able to trace exactly which social networking website an image came from and the cell phone that captured the image, but the upload process makes it difficult for investigators to determine where there images originated.

Cell phone cameras create photos in a unique way, providing a method of identification. Social networking websites alter uploaded images to normalize and reduce file size, providing a distinctive signature. Identifiers from the unique method that cell phone cameras use to capture photos and the distinctive signature produced by social networking websites are the basis of this study.

A database of cell phone camera images has been compiled to determine the unique signatures. These images were then uploaded to social media websites including Facebook®, MySpace, and Twitter® to determine which unique signatures remained for identification. The alterations done by the social media website image upload process were then recorded and compared against other social networking websites.

The database of cell phone camera images will be compared with test images of unknown origin to determine the cellphone camera that captured the photo and the social networking website that it was uploaded to. The database of images uploaded to social networking websites will be compared to determine distinctive signs of each of the social networking websites uploading process.

The final results of this research will show that images uploaded to the Internet can be identified given a sufficient database of images to compare, and known identifiers of cell phone cameras and social networking website upload systems.

Reference:

1. Helenek K. Facebook®: Do You Leave a Trace?: A Forensic Analysis of Facebook® Artifacts. *Proceedings of the American Academy of Forensic Sciences*; 2012, Atlanta, GA.

Facebook®, Cell Phone, Social Media

 ** Presenting Author*