Forensic Analysis of Thumbnail Images in Windows 10

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Abstract : Digital evidence plays a critical role in most legal investigations. In many cases, thumbnail databases show important information in that investigation. The probability of having digital evidence retrieved from a computer or smart device has increased, even though the previous user removed data and deleted apps on those devices. Due to the increase in digital forensics, the ability to store residual information from various thumbnail applications has improved. This paper will focus on investigating thumbnail information from Windows 10. Thumbnail images of interest in forensic investigations may be intact even when the original pictures have been deleted. It is our research goal to recover useful information from thumbnails. In this research project, we use various forensics tools to collect left thumbnail information from deleted videos or pictures. We examine and describe the various thumbnail sources in Windows and propose a methodology for thumbnail collection and analysis from laptops or desktops. A machine learning algorithm is adopted to help speed up content from thumbnail pictures.

Keywords : digital forensic, forensic tools, soundness, thumbnail, machine learning, OCR
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