Rapid Detection of Stego Images Based on Identifiable Features

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Abstract—An increasing number of images in the Internet brings forward a higher requirement on the speed of steganalysis. For the problem of real-time detection of stego images, a rapid images steganalysis method based on identifiable features is proposed, where the identifiable features are specific character sequences left in stego images by steganography tools. The stego and cover images are distinguished according to whether the identifiable features are found in the detected images. Meanwhile, for the case of that multiple identifiable features appeared on the same location of an image, the AC (Aho-Corasick) multi-features matching algorithm is applied to improve the detection speed. In experiments, the detection method is used to detect eight steganography tools such as Invisible Secrets, E-Show, BMP Secrets and so on. The results show that the proposed steganalysis method can achieve a nearly perfect detection precision, and the detection speed can be improved significantly comparing with traditional methods (matching bytes one by one).

Keyword—Steganalysis, Identifiable features, Steganography tools, AC algorithm, Stego image detection.

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