Multi-Class Classification for Identifying JPEG Steganography Embedding Methods (Paperback)

By Benjamin M Rodriguez

Biblioscholar, United States, 2012. Paperback. Condition: New. Language: English . This book usually ship within 10-15 business days and we will endeavor to dispatch orders quicker than this where possible. Brand New Book. Over 725 steganography tools are available over the Internet, each providing a method for covert transmission of secret messages. This research presents four steganalysis advancements that result in an algorithm that identifies the steganalysis tool used to embed a secret message in a JPEG image file. The algorithm includes feature generation, feature preprocessing, multi-class classification and classifier fusion. The first contribution is a new feature generation method which is based on the decomposition of discrete cosine transform (DCT) coefficients used in the JPEG image encoder. The generated features are better suited to identifying discrepancies in each area of the decomposed DCT coefficients. Second, the classification accuracy is further improved with the development of a feature ranking technique in the preprocessing stage for the kernel Fisher s discriminant (KFD) and support vector machines (SVM) classifiers in the kernel space during the training process. Third, for the KFD and SVM two-class classifiers a classification tree is designed from the kernel space to provide a multi-class classification solution for both...

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