

# Forensic Techniques for Image Source Classification: A Comparative Study

Edward J. Delp

Purdue University  
465 Northwestern Avenue, West Lafayette, IN 47907-2035, USA  
ace@ecn.purdue.edu

**Abstract.** Digital images can be captured or generated by a variety of sources including digital cameras, scanners and computer graphics softwares. In many cases it is important to be able to determine the source of a digital image such as for criminal and forensic investigation. Based on their originating mechanism digital images can be classified into three classes: digital camera images, scanner generated images and computer-graphics generated images. Image source classification is helpful as a first step for identifying the unique device or system which produced the image. This paper presents a survey of different methods for solving image source classification problem, some improvements over them and compares their performance in a common framework. As expected with the advances in computer graphics techniques, artificial images are becoming closer and closer to the natural ones and harder to distinguish by human visual system. Hence, the methods based on characteristics of image generating process are more successful than those based on image content.