D74   Skin Tone Detection for Contraband Image Analysis

Marc Rogers, PhD*, Abhishek Choudhury, and William B. Gillam, MSc, Purdue University, 401 North Grant St, Knoy Hall of Technology Room 255, West Lafayette, IN 47907-2021; and Keith Watson, and Richard P. Mislan, ABD, Purdue University, PO Box 2165, West Lafayette, IN 47907

The goals of this presentation are to provide an overview of skin tone filters for contraband image analysis and to obtain feedback from the community on the development and application of a novel approach.

The development of the skin tone detection filter greatly enhances the ability to isolate those images that have a high probably of depicting child pornography. This presentation will impact the forensic science community by bringing practitioners up to speed with the latest developments in digital evidence.

After attending this presentation, attendees will more aware of some of the developments in contraband image analysis algorithm development.

The presentation discusses the development of a skin tone detection algorithm to be used by first responder digital forensic tools such as File Hound developed at Purdue University. File Hound is a "field analysis" software that is currently being used by over 100 law enforcement agencies worldwide. It is mainly used in forensic investigations to search for and identify pornographic images from a storage device. Ever since the conception of File Hound several steps have been taken to improve its performance and expand its features. One such feature added is a skin tone detection filter that can identify images with a large skin count. This filter was developed based on the theory that there is a strong correlation between images with a large skin count and images that are pornographic in nature. A novel skin tone detection filter was developed for these purposes and this filter was tested against images obtained from the Compaq Image database for skin tone detection. The filter was successful at identifying skin tone across races and differing illumination.

Digital Evidence, Computer Forensics, Skin Tone