ChildScene

An Image (on the Right) Being Matched Against a Database of Full and Cropped Images in Different Formats. Matches are on the Left

ID FORCE International

Automatic processing of images of child abuse

The **ChildScene** system is the result of the Face Forensics team's previous experience in developing unique AI-based software to automate the processing of seizures containing images of child abuse. It substantially reduces the time to process a seizure, and the trauma experienced by the investigators who have to view the images.

ChildScene compares images of abuse on seized PCs or websites against a master database of images and videos from previous seizures, distinguishing between known and unseen images (even if heavily cropped or reformatted), enabling investigators to focus on the unseen images which can often comprise a small fraction of a seizure

- It can lead to the possible recovery of the children, and the identification and prosecution of offenders.
- It links images of scenes of abuse on seized PCs with victims, offenders, tattoos (SMT), and specific objects in the images, helping identify offenders and victims through scene, face, partial face, tattoo, and 2D object recognition.

ChildScene has been designed to connect easily to existing law enforcement databases containing known images and videos of abuse. It accesses these in read-only mode. The system need hold no images itself, just the encode arrays. These cannot be reversed back to the images.

The primary use of ChildScene is to automatically separate new images of abuse from ones on previously seized PCs and other media. To do this the media is copied and then connected as an external drive to a fast multi-core processor array running ChildScene. The system will read each image or auto-selected video frame, encode it using its unique algorithms, and compare each against a master database containing all the encode arrays of images that have already been seen in previous seizures. Unlike existing image matching approaches, ChildScene will recognize images that have been resaved, reformatted, or that have been lightly or heavily cropped. Previously unseen images (which are likely to be a small subset) may well be of children that the suspect has abused. They are copied to a separate folder for officers to investigate.

All previously unseen images above a selected severity level can optionally be processed using face, partial face, object, and offender SMT recognition to match against databases of victims and offenders, enabling victims to be recognized and offenders identified.

Within ChildScene the core entity is a scene, i.e. an image of abuse.

ChildScene Database Relationships

Scenes —— Objects

Victims —— Offenders —— Tattoos/SMT
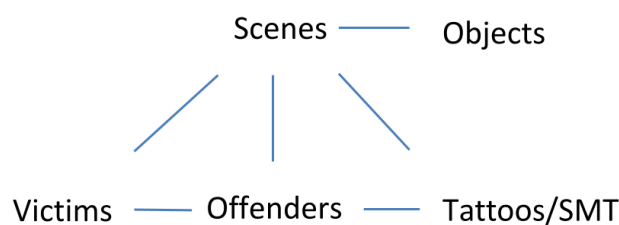
Key features are:

- The matching speed of an encoded scene depends on the hardware configuration but can be in the millions of images per second. ChildScene can be easily networked, allowing users to connect to different databases on a VPN under appropriate controls

- The scenes database can hold an unlimited number of records

- ChildScene can work in conjunction with existing image processing tools

ChildScene is built on experience gained by the team in developing the ChildBase system for the UK National Crime Squad (now the NCA/CEOP). It was launched at the House of Lords.

System Requirements

ChildScene is client/server software available as a stand-alone/networked application, a .NET SDK, and as a web service. It runs under Windows 10 and 11, and works with SQL Server and Oracle databases. It will recognize scenes and faces in still images, video files, and websites.

ChildScene is available to law enforcement agencies for evaluation at no charge, fully supported

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Face Forensics