B22 3-Dimensional Analysis of Video Footage

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After attending this presentation, attendees will be familar with methods for 3-D visualization based on video footage.

This presentation will impact the forensic community by giving new insights on 3-D visualization based on video.

Video footage from CCTV, phonecams, etc. can be used to track, trace, and identify perpetrators. However, with the growing number of video recording devices, the amount of information increases rapidly. This makes it necessary to improve the process of capturing, converting, synchronizing, viewing, and analyzing video files. Surveillance images could be used more effectively with the help of 3-dimensional models of the scenes that are visible in the surveillance images.

First, virtual camera views in 3-D models can help to design a camera plan with an optimal coverage of the areas under surveillance. When these virtual camera views are matched with the real camera views, it becomes possible to estimate the position and speed of people and cars that are visible in the real video images.

With such information, it can be predicted when a person or car might show up in another camera. At the Netherlands Forensic Institute a project is being carried out to reconstruct all movements of people and cars before, during, and after a big incident from analysis of all available video footage.

In this presentation, a brief description of the project is given. Forensic aspects of the interpretation of video footage are demonstrated with video footage from a police investigation and a 3-D model of an urban area. The models are used as a tool for documenting observations in the video, combining these observations with other information sources, and for testing and documenting hypotheses on relations between events in different cameras.

3-D, CCTV, Video Footage

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