Exploring Video Streams using Slit-Tear Visualizations

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Abstract
Slit-tear visualizations allow users to selectively visualize pixel paths in a video scene. The slit-tear visualization technique is a generalization of the traditional photographic slit-scanning and more recent video slicing techniques: after a user specifies a pixel path of interest, the system generates a timeline that replicates those pixels for each frame in the video. These rich visualizations of the video data help users to discover and explore spatio-temporal patterns of activity in a video. In this video, we illustrate the use of slit-tear visualizations to detect movement and incidence of activity in a video scene, accentuate directional motion and small changes in the video, and discover patterns of activity between spatially distinct areas of the scene.

Keywords
video analysis, video visualization, video interaction, information visualization

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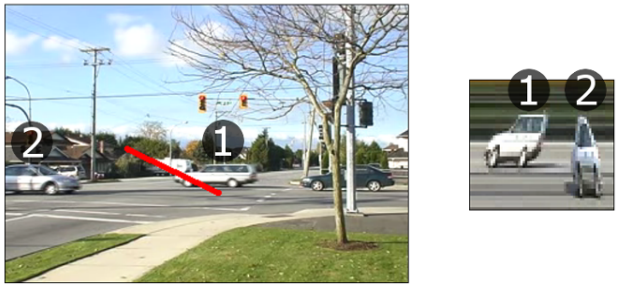

Figure 1. The red slit-tear drawn on the video-scene on the left produces the timeline visualization on the right. Notice the two cars (numbered) passing through the slit-tear are slanted differently in the visualization depending on which direction they were traveling.

ACM Classification Keywords
H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

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References
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