

- 1 *The Smart Eyes system observes a fan tribune during a soccer match. If wanted, waving flags – although salient – are suppressed automatically as being not security relevant. (green box).*
- 2 *Instead the software focuses on salient events such as a person on the edge of the pitch (red box).*

SMART EYES: DETECTION OF SALIENT EVENTS

Focus on saliency

Video record of a typical monitoring camera contains mostly common events with only a few frames showing events of particular interest. Same is true for snapshots taken in a crowded place: if anything unusual happens here it takes only a small fraction of the whole scenery and can easily go unnoticed amidst numerous other activities. SEARISE technology is capable to learn what is salient in a given scene by building observation models of activities. The learned models enable the automatic detection of highly salient events in real time.

Security relevant events

Saliency is a measure of relative novelty. Therefore salient events may not be security relevant. SEARISE software can learn from a few video samples of security relevant events specified by experts. SEARISE software then analyzes all salient events in the scene to detect the specified security events. The software can update its knowledge about the learned events via automatic on-line learning. Additional interactive learning allows incorporation of new security relevant events into the previously learned model.

Applications areas

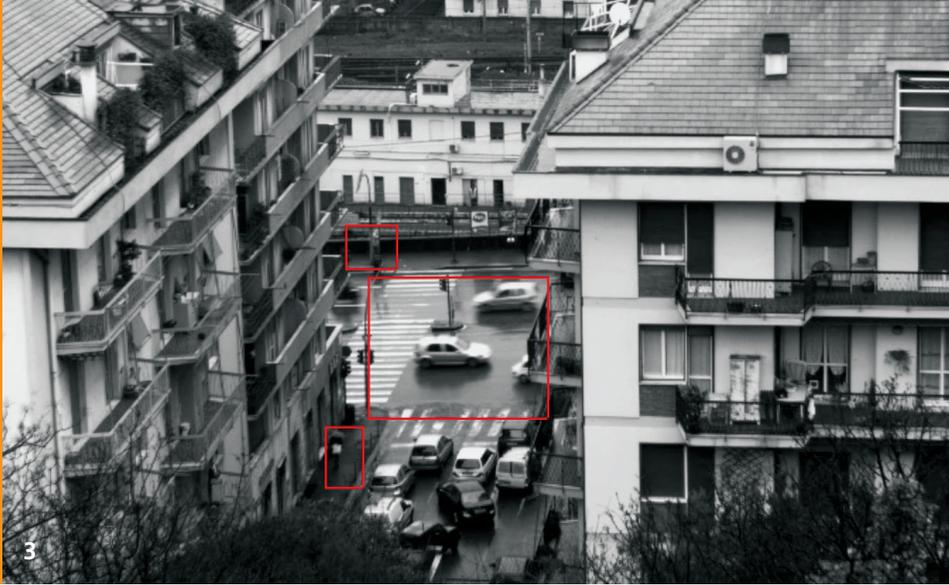
- Detection of traffic violations
- Detection of violations in public areas
- Detection of non-compliance to restrictions (e.g. walking direction in gates)

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At a steady pace with events

Searching for the security relevant events within a large scene is a tedious task. The search in high resolution overloads the CPU and is prone to false alarms. By reducing the search space to the salient regions only, SEARISE software analyses events in real time while providing dramatic drop in false alarms.

Economical data transmission

Video surveillance generates an enormous amount of video data. These are too large to be transmitted in full. SEARISE technology provides a natural compression tool by selecting the salient events first and by detecting only security relevant events out of them.

Easy deployment

With only a few parameters SEARISE software self-adapts to the video input. The SEARISE technology requires neither camera calibration nor sophisticated installation. Built upon the generic principles of saliency and learning, the SEARISE software is fully independent from the type of a camera and operates in different application scenarios.

Benefits of SEARISE technology

- Real time analysis
- Less false alarms
- Adaptation to the video data
- Few parameters – no calibration
- Interactive learning of additional events
- Efficient data transmission
- Easy installation

»SEARISE – Smart Eyes: Attending and Recognizing Instances of Salient Events« is coordinated by Fraunhofer and partly funded by the European Commission. Partners are DIBE – University of Genoa, University Ulm, INRIA – Odyssee Lab, University Tübingen, TrackMen Ltd., and ESPRIT Arena – Congress Center, Düsseldorf.