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VISION LAB
Center of Excellence for Computer Vision and Wide Area Surveillance Research


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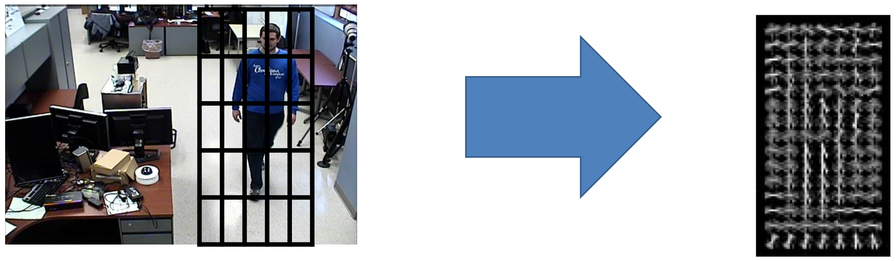
Human Re-Identification in Multi-Camera Systems

Objective

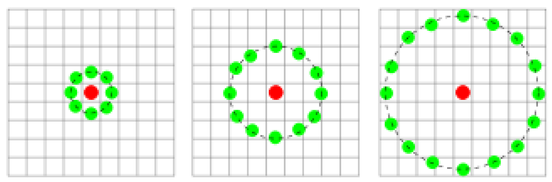
The objective is to take frames from multi-camera systems and perform human identification analysis on them in real time. Each frame of multiple cameras needs to be captured and analyzed with image processing methods. If a human is identified on one camera, it should be identified as the same person on another camera.

Method

- Use previously defined SVM coefficients trained for people detection to detect humans
- Perform Histogram of Oriented Gradients on detected humans

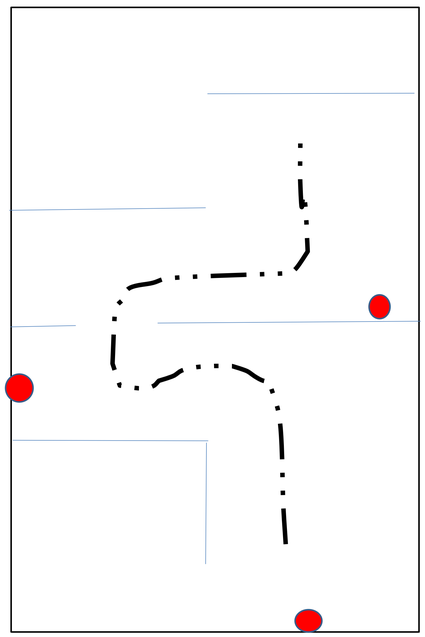


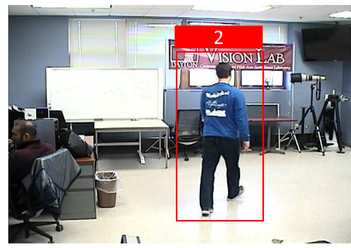
- Compute Local Binary Pattern (LBP) descriptors of human to define texture



- Compute Color Histogram of human to determine unique ID

Experiment and Results





Summary

The algorithm works perfectly for each individual camera. However, due to lighting conditions, settings of the different cameras, and size and pose of the person in the camera frame they do not calculate a persons unique ID as the same. Future work will include pose estimation and lighting reductions to fix the errors.

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