

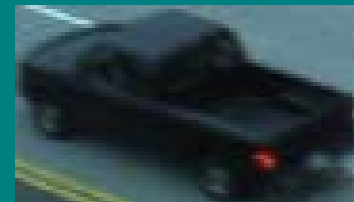
AUTONOMOUS VEHICLE IDENTIFICATION

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Goal: Identify different vehicle types (Sedan, van, truck, and SUV)

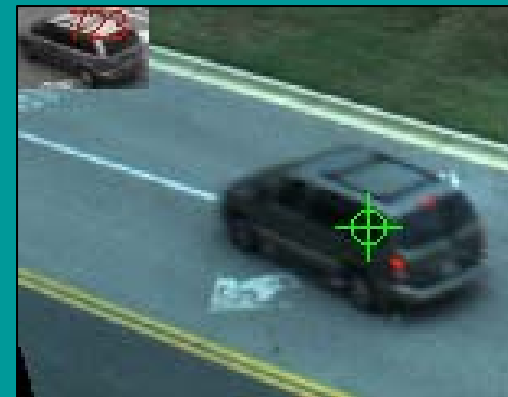
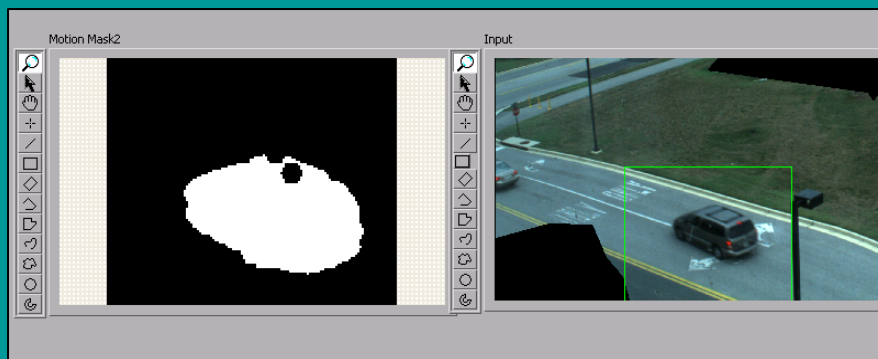
Presentation Overview:

- Object detection
- Pattern recognition
- Template database
- Timing for execution
- Output format
- Results & conclusion



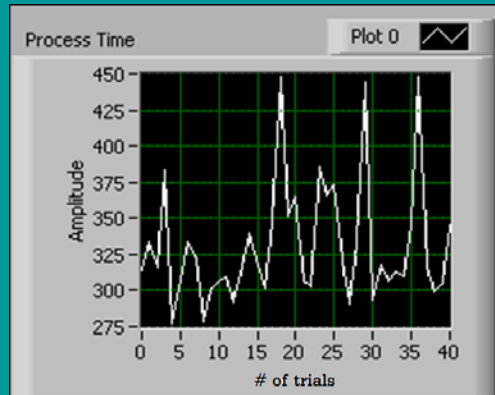
DATA ANALYSIS

- Object detection – motion mask is obtained by performing an image subtraction from an average background
- Pattern recognition- cross-correlation and edge detection is used to identify vehicles
- Template database- a collection of cropped car images manually captured from the digital camera
- Timing for execution – object size has to be 1000-3500 pixels and its center of mass is in the region of interest
- Output format – overlay score and closest match template image to benchmark performance and for surveillance purposes

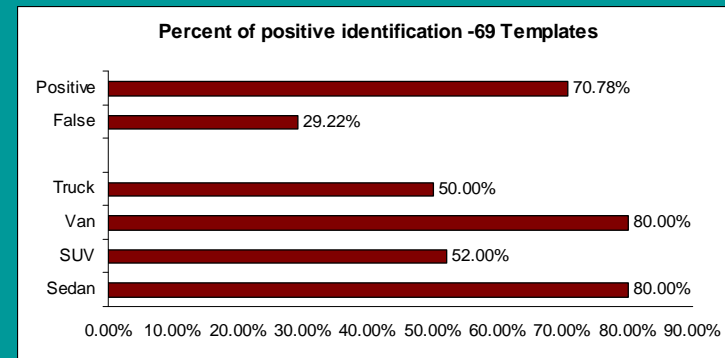
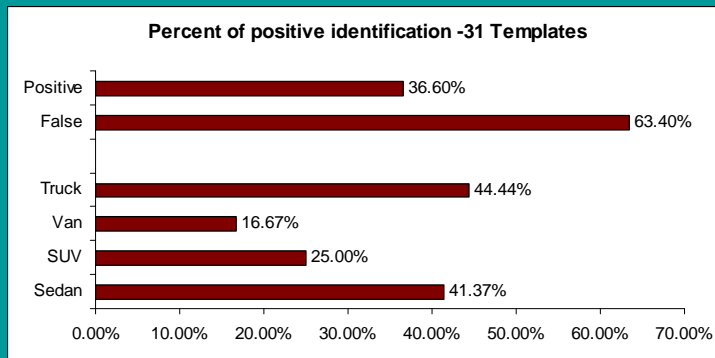
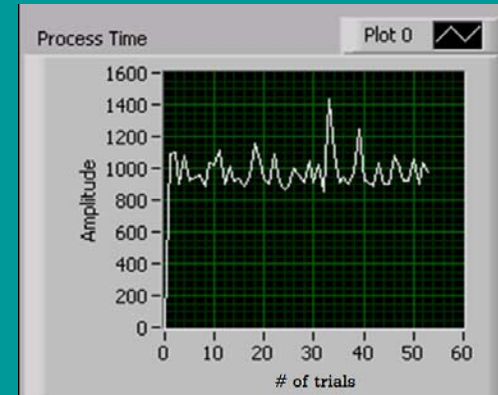


RESULTS & CONCLUSIONS

31 templates



69 templates



- A larger template database increases processing time but also improves identification accuracy
- It is difficult to distinguish between trucks with canopies and SUVs
- Sedans and vans have the highest positive identifications

