Urban Guardian

Clean Streets through Anomaly Detection in Video Stream

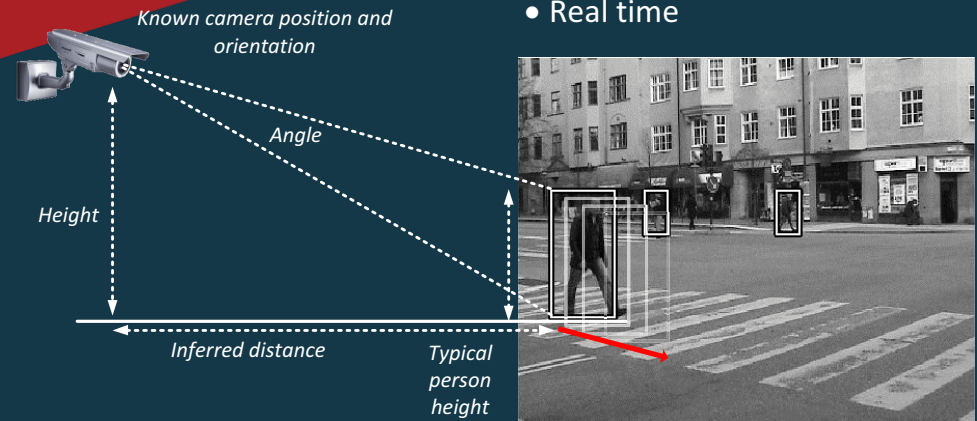Jakub Šimko, Dušan Zeleník

S T U
F I I T

Problems
- Polluted streets
- Non-disciplined citizens
- Existing surveillance used ineffectively

Goals
- Cleaner streets
- Effective repression against delinquents

Anomaly detection
- Litter dropping
- Illegal waste deposits
- Property deterioration
- Vandalism
- Public urination
- Wrong parking

Offset image
contains differences

Reference image
view in the default state

Person tracking
- Neural network
- Real time

Known camera position and orientation

Angle

Height

Inferred distance

Typical person height

Trajectory is computed

Solution
- Anomaly detection in video streams
- Person detection
- Multiple camera system
- Human operator as a supervisor
- Real time suspect tracking support

- Known camera position
- Inference of human real position
- Multiple camera system allows position correction, tracking fleeing suspects