



Smart Surveillance with Deep Convolutional Networks

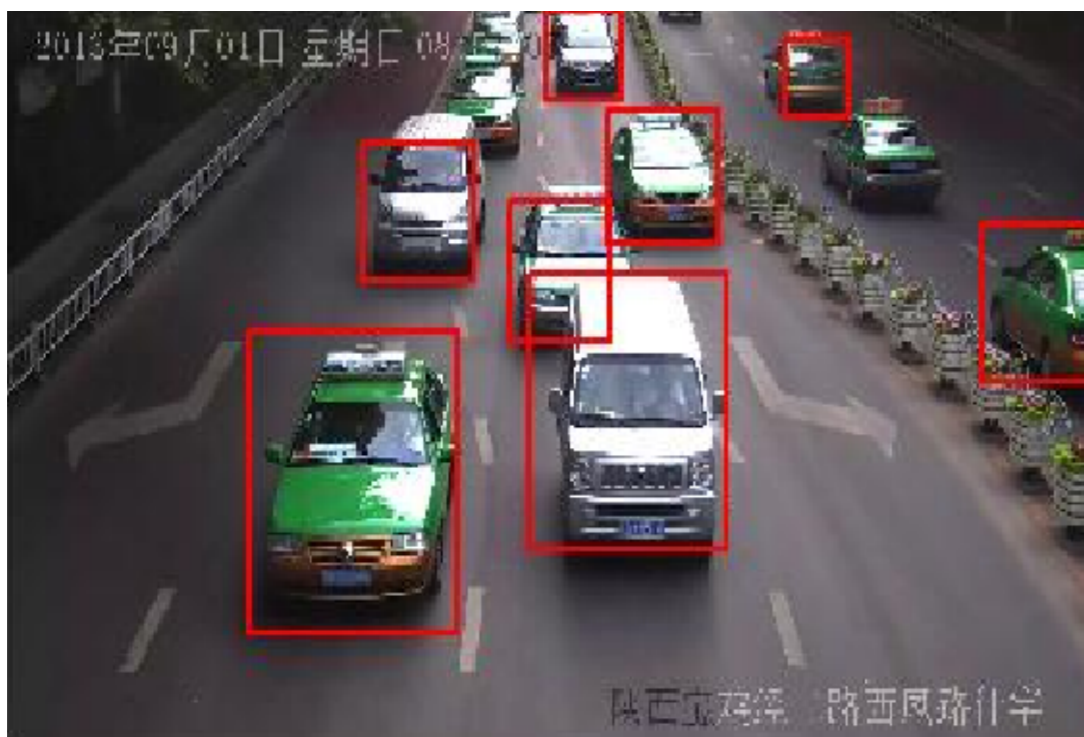
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- **Complementary models for classification**
 - supervised CNN pre-train model: start with 3-layers CNN, do not decrease the learning rate during pre-training
 - vary resolution model
 - more than **0.3%** accuracy improve
- **Simple pipeline for localization (reduce error to 0.36 now)**
 - using RP to extract region proposals
 - fine-tuning 200-way classification model
 - averaging top-k regions' coordinates
- **Detection (boost mAP 2%)**
 - train R-CNN on selective search regions and RP regions
 - combine two models using nms

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- Vehicle classification: $\sim 0.8k$ categories, error $< 2\%$
- pedestrian/vehicle retrieval, object tracking, face verification ...



- **We are planning to release a large scale surveillance dataset, feel free to contact us!**