Advertisement localization in outdoor scenes

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Motivation

With rapid growth in internet services, there has been growth in online video with adverts. These adverts are manually inspected by video editors for advert placement, leading to time consuming process. Therefore, an automated techniques for advertisement placement for targeted audiences is important, wherein new advert is seamlessly integrated into original video frames.

Research Objective

- Accurately localizing the billboards in outdoor scenes.
- Systematically benchmarked with several widely used segmentation algorithms.
- Implemented an evaluation metric to assess the accuracy of billboard localization models

Proposed Methodology

The encoder block consists of three conv layers with filters [64, 128, 256] and three maxpooling layers sized (3 × 3).

The decoder block consists of four deconv layers and three upsampling layers with deconv filters [256, 128, 64].

The final deconv layer comprises a filter with dimensions (1 × 1) for localization.

Conclusion and Results

- LinkNet and U-Net models produce coarse results, failing to accurately identify the billboard’s location.
- The probability map of proposed AdSegNet model illustrates the confidence level for each pixel’s association with the billboard location.
- The ROC curve depicts the trade-off between TPR and FPR.

References