# Literature Review Draft

1. This paper introduces a single network, object detection algorithm, You Only Look Once. As the name suggests, YOLO frames the bounding boxes by assigning each object a confidence score and classify the object on the basis of how confident it is about the categorization of the object. The paper compares the performance of YOLO to other object detection algorithms like, DPM and R-CNN. As a result, YOLO out performs both the algorithm as it is a one-time evaluation, although it has its own drawbacks.
2. This paper provides a detailed study of multi-spectral KAIST Dataset. This dataset comprises of a wide collection of images for autonomous driving. From urban to residential, day and night, including sunrise, sunset, afternoon, morning, night and dawn. Both RGB and thermal camera are coaligned to attain the same orientation in both images. A detailed examination of RGB, Thermal, fusion of RGB and Thermal and LiDAR images along with the appropriate camera specifications is presented.
3. This paper examines the accuracy gain of different pedestrian models (holistic, part-based, patch-based) when trained with images in the far infrared spectrum. Comparison of detection accuracy on test images recorded at day and nighttime is done, if trained and tested using (a) plain color images; (b) infrared images; and (c) both of them. It proposes an early fusion approach to combine features from both modalities, i.e., color and infrared images.
4. This paper points out that the primary drawback of RGB semantic segmentation networks is that RGB images are susceptible to degradation with inadequate lighting conditions while thermal cameras generate images using thermal radiation emitted by objects and are independent of lighting conditions. So, this paper proposes to fuse both the RGB and thermal information in a novel deep neural network. An Encoder-Decoder design concept and ResNet is employed for feature extraction.
5. This paper compares six convolutional network fusion architectures and analyses their adaptations, enabling a vanilla architecture to obtain detection performances comparable to state-of-the-art results. Based on the discovery that pedestrian detection confidences from color to thermal images are correlated with illumination conditions, it proposes an illumination-aware Faster R-CNN to give an illumination measure of the input image

## References

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