Improved attention mechanism-based object detection method

Paper ID:
FSDM3892

Jing Zhou*, Ze Chen
School of Artificial Intelligence, Jianghan University, China

Introduction

Aiming at the problems of low detection accuracy for objects with non-significant features in the FCOS network, a new object detection method based on attention mechanism is proposed to improve the performance of FCOS network, which can effectively guide the network to focus on the detailed features of objects.

Methods

- SE Attention mechanism
- FCOS object detection network
- Improved attention-based object detection network based on SE module

Graphics / Images

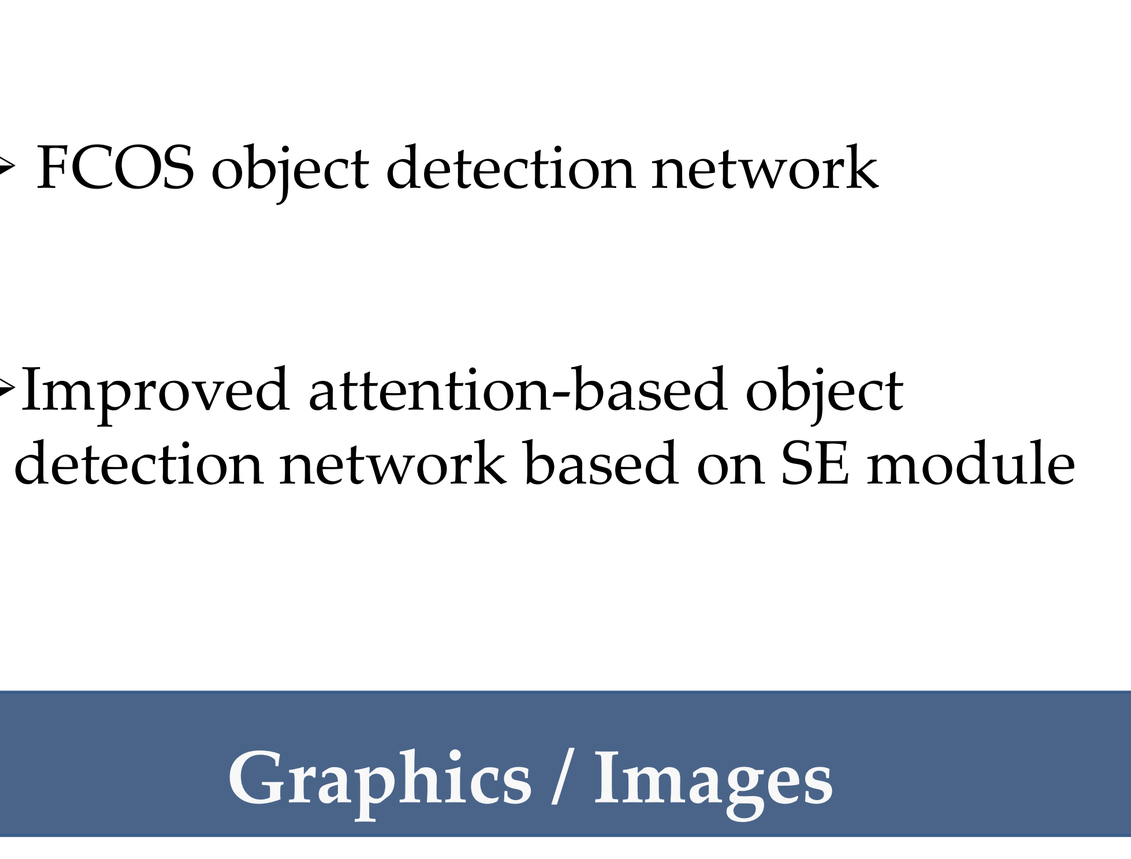

Figure 1. Resnet-50 structure and bottleneck module

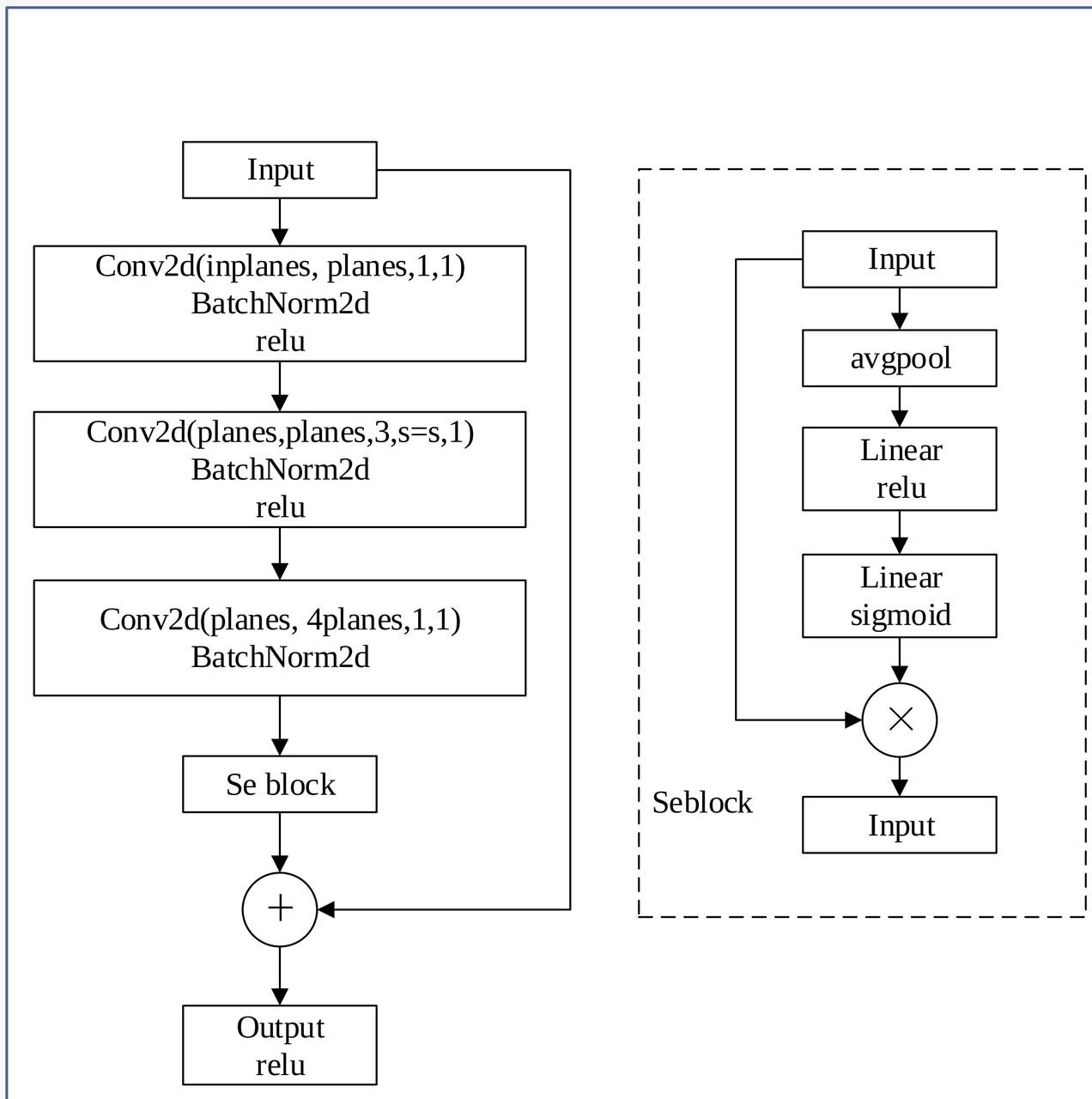

Figure 2. Improved Bottleneck structure

Conclusions

By introducing the attention mechanism-based SE block to the FCOS object detection network, a new attention mechanism-based object detection method is proposed in this work. The improved method can focus on the significant features of the detected object, weaken the subordinate features, and further improve detection performance. Experimental results deliver that the improved FCOS model is superior to YOLOX, SSD and Faster R-CNN detection models, and its performance is significantly improved compared to the standard FCOS method, meanwhile, AP value of each category is obviously promoted.