Trimble article review

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Introduction

Crowd counting is reccurent problem nowadays, for very different purposes. It can be use for video surveillance, crowd mangement or even ecosystem surveillance.

There is two distinct method for crowd counting.
Density-based methods, which uses a density map to count crowd, are sensitive to kernel choice and size and result in inconsistent performance for varying crowd sparsities. Additionally, they only provide an estimate of people count, failing to capture individual information such as person location and size.
Point Based Method are at the opposite more suited to caputre individual information by detecting the heads. It uses head position annotation directly but performances are very dependant to the confidance threshold.

1 Article purpose

This paper proposes a new method using multiscale point supervision and a multitask approach that improves the performance of crowd counting in both densely and sparsely populated crowd scenes. This approach without generating any density maps, is better suited for varying crowd sparsities. The proposed method can also perform localization, making it useful for other applications such as multi-object tracking, person re-identification, and face recognition.

2 Results

The experiments show that the model achieves strong results in comparison to other works in the area on both datasets for both crowd counting and localization tasks.

3 Conclusion

The article concludes by suggesting future work to explore avenues for the different terms in the loss function to be automatically weighted through learning. We can also note that this article was published in 2022, and they dont compaire all state of art networks on this topic. There are some network that were publish in 2019 that give better results, that are not in comparison table (for exemple SGA net).
A good idea might be using another, more modern backbone instead of VGG16.

4 Why do i choose this article?

I really enjoy that subject, i had the chance to work on this topic during my last year at university. Knowing all the things that are possible with this, is for me enjoyable. We can count crowd from an ecosystem, in forest for exemple.