R-CNN

Computer Vision - Object Detection

Group 8

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Preface

Computer Vision Object Detection using Faster R-CNN, Mask R-CNN, and YOLOv8

Please visit our repository in GitHub.

```
1 + 1
```

```
2
```

1 Introduction

This is a book created from markdown and executable code.

See Knuth (1984) for additional discussion of literate programming.

```
1 + 1
```

```
2
```

2 Summary

In summary, this book has no content whatsoever.

```
1 + 1
```

2

2.1 Subtitle

text

2.1.1 Subtitle 2

This is last level.

Matrices

$$\begin{bmatrix} 1 & 0 \\ 0 & 1 \\ 2 & 3 \end{bmatrix}$$

Another example.

$$\sqrt{x^2 + 1}$$

This is a simple math expression without numbering separated from text.

3 Literature Review

The evolution from R-CNN to faster R-CNN represents a significant advancement in object detection algorithms, especially in terms of speed and efficiency. A brief history of the development progression of R-CNN, Fast R-CNN, and Faster R-CNN adds valuable context to our study on object detection architectures. It will help to understand the evolution of these models, the motivations behind their development, and the improvements made over time.

3.1 R-CNN (Region based Convolutional Network)

R-CNN was a breakthrough in object detection. It employed a multi stage approach that involved selective search for generating region proposals followed by a convolutional neural network for feature extraction and a support vector machine (SVM) for object classification within each region.

References

Knuth, Donald E. 1984. “Literate Programming.” *Comput. J.* 27 (2): 97–111. https://doi.org/10.1093/comjnl/27.2.97.