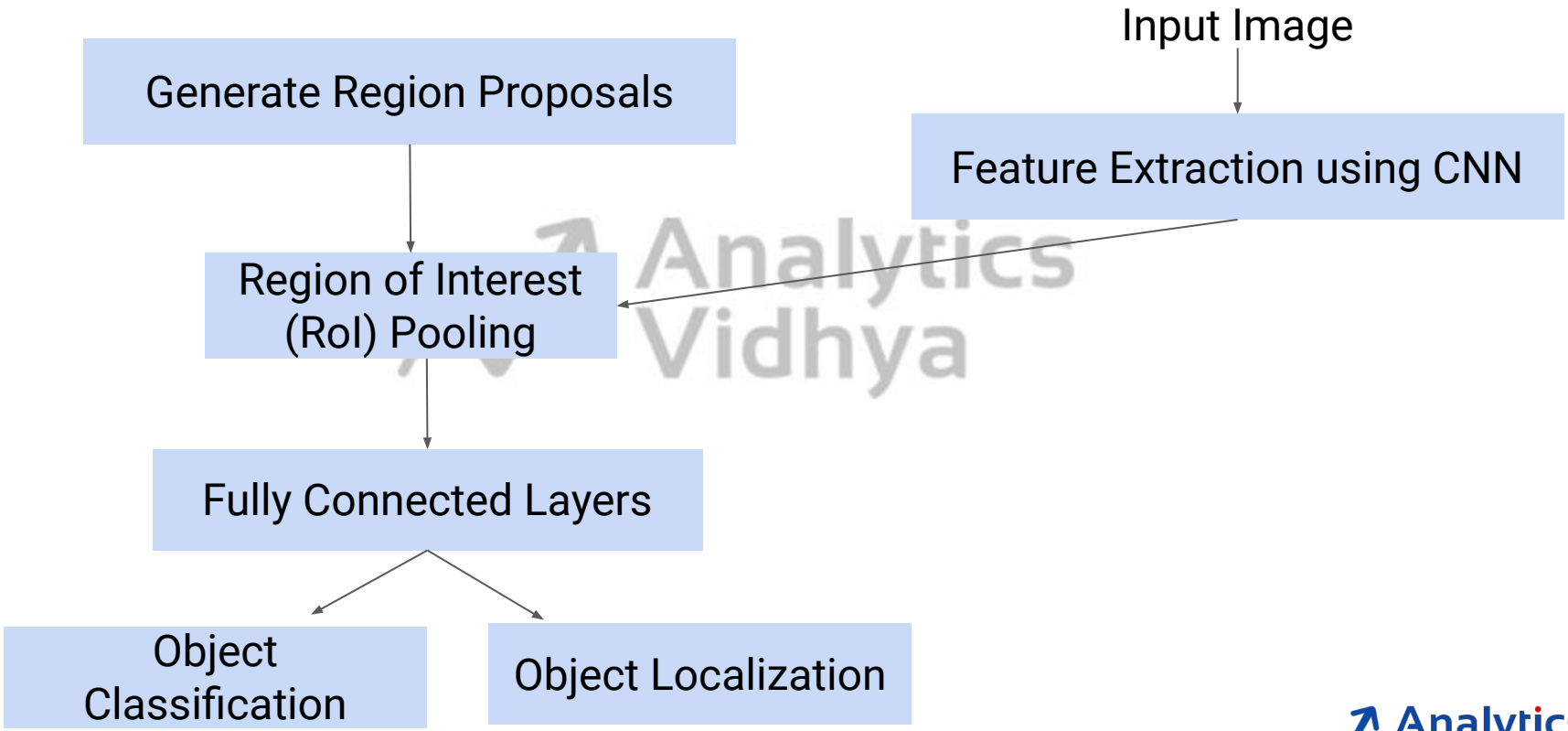
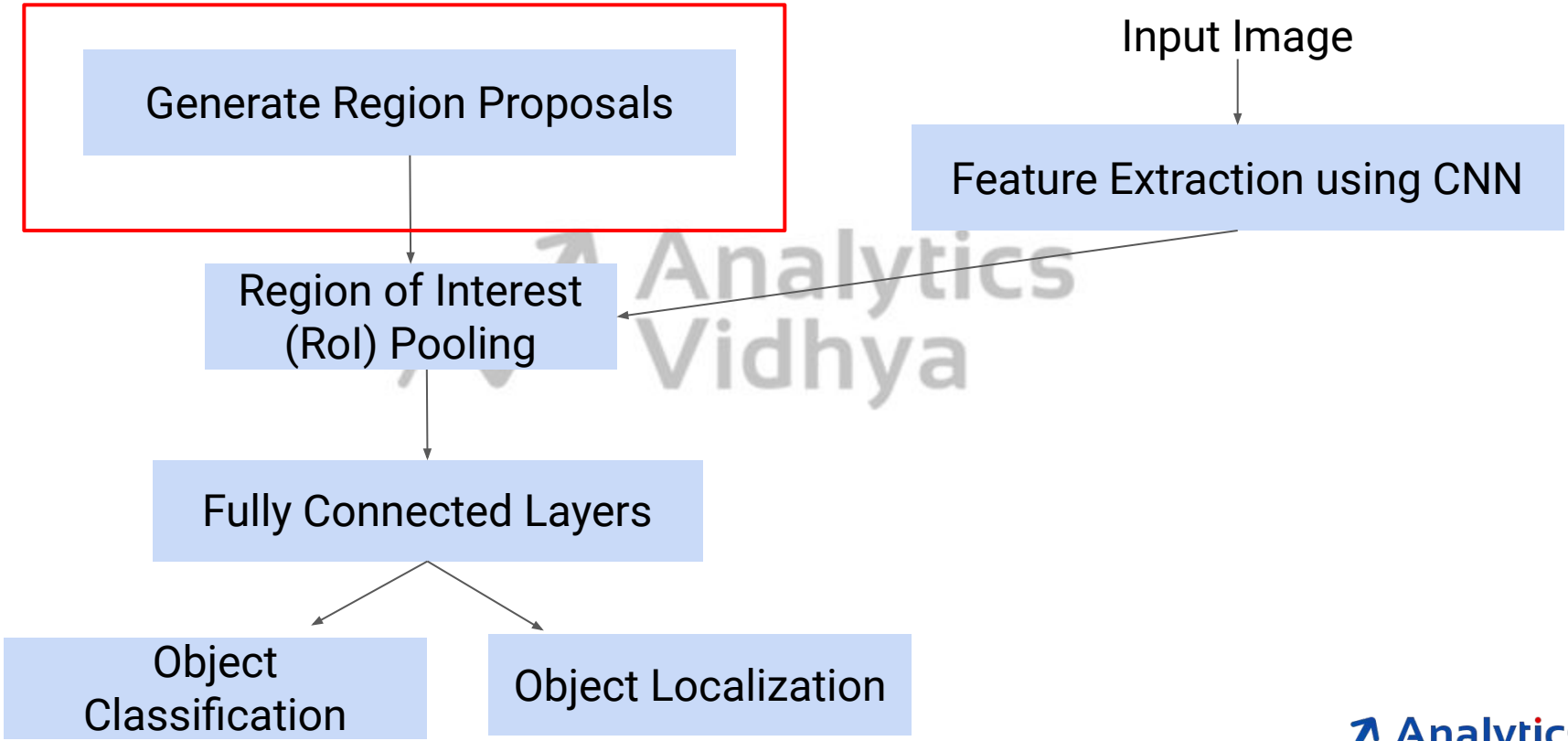
Faster R-CNN

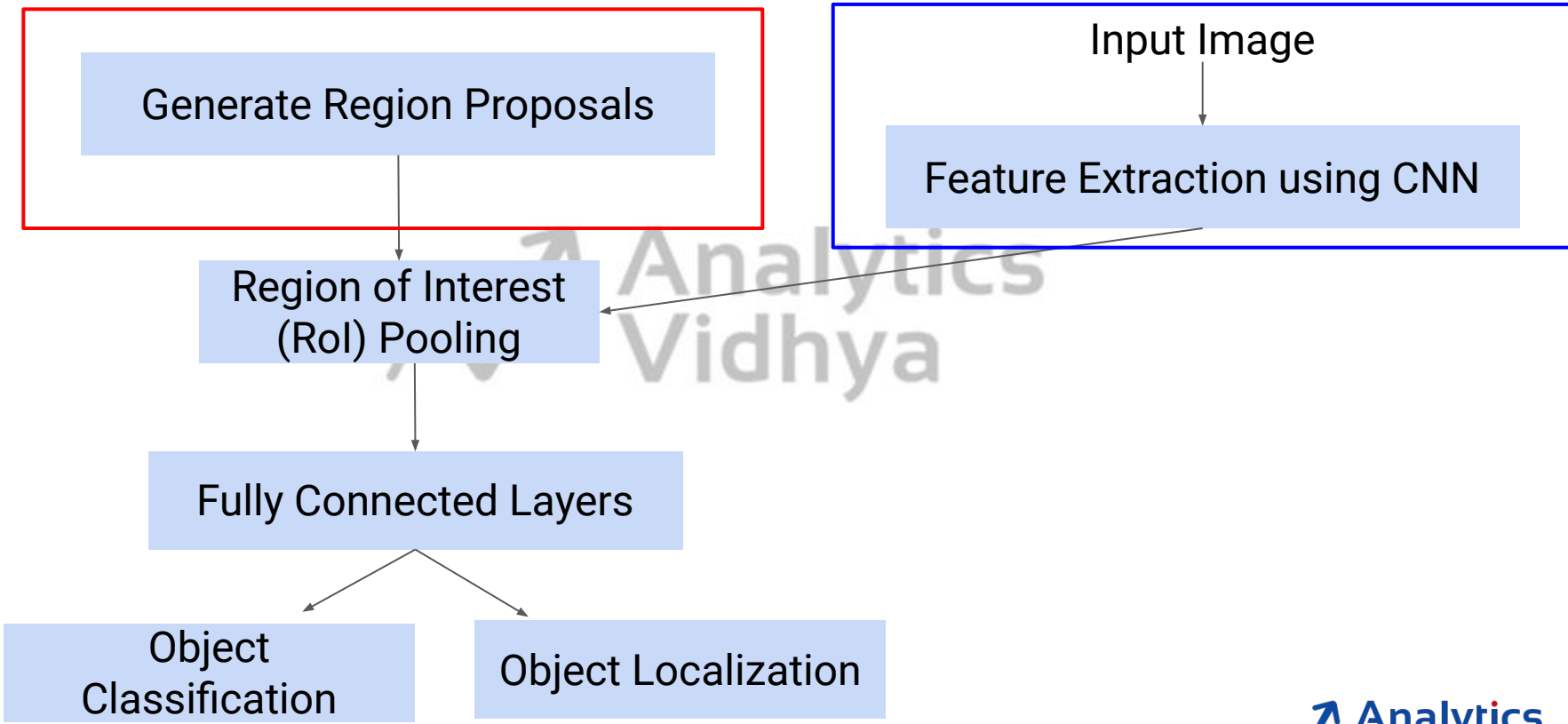
Recap to Fast R-CNN



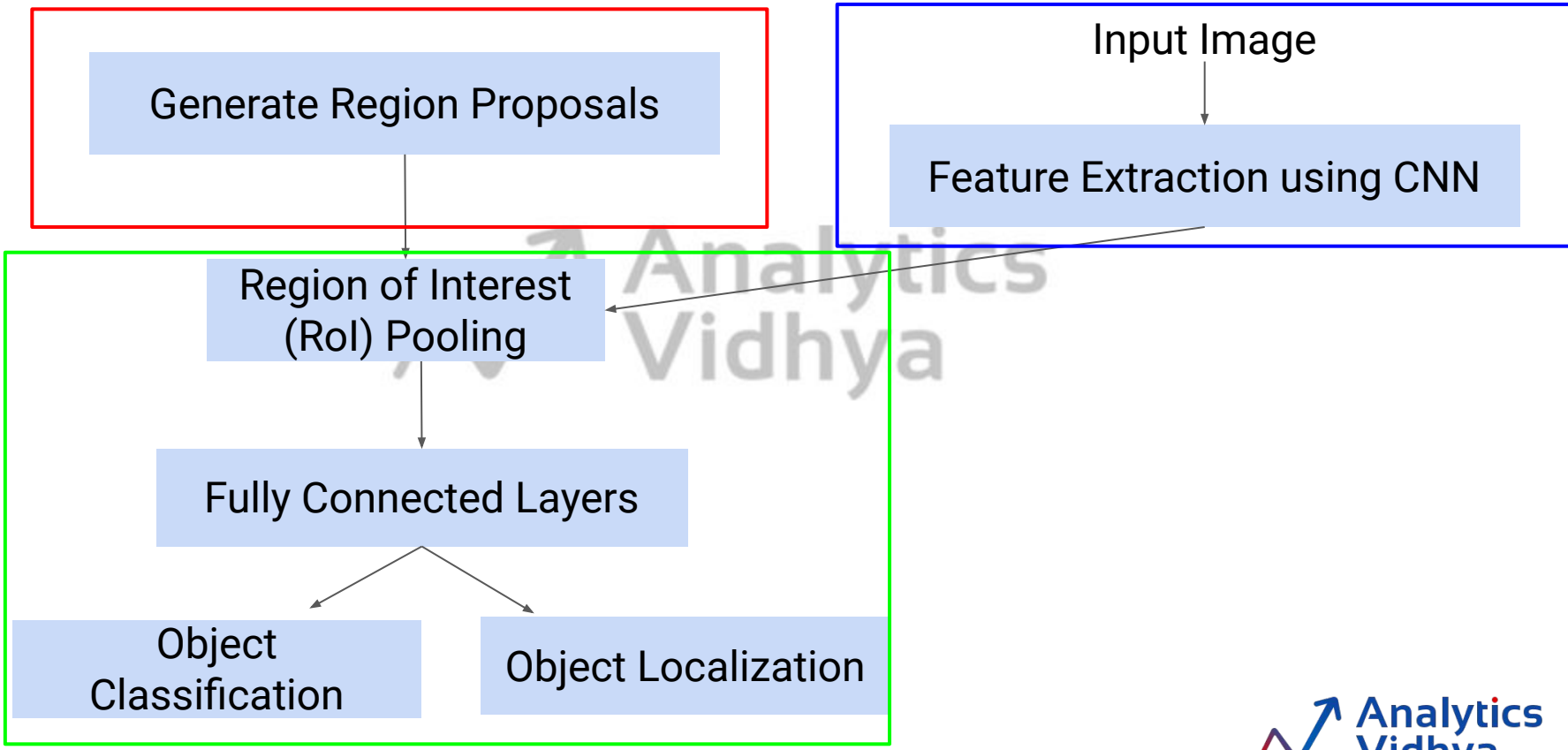
Recap to Fast R-CNN



Recap to Fast R-CNN



Recap to Fast R-CNN



Problems with Fast R-CNN

- Selective Search is a time taking process
- No training is happening in selective search

Problems with Fast R-CNN

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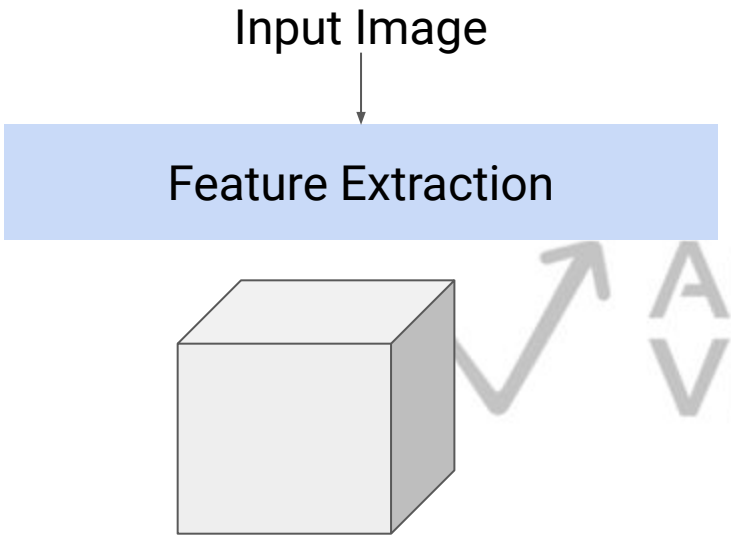
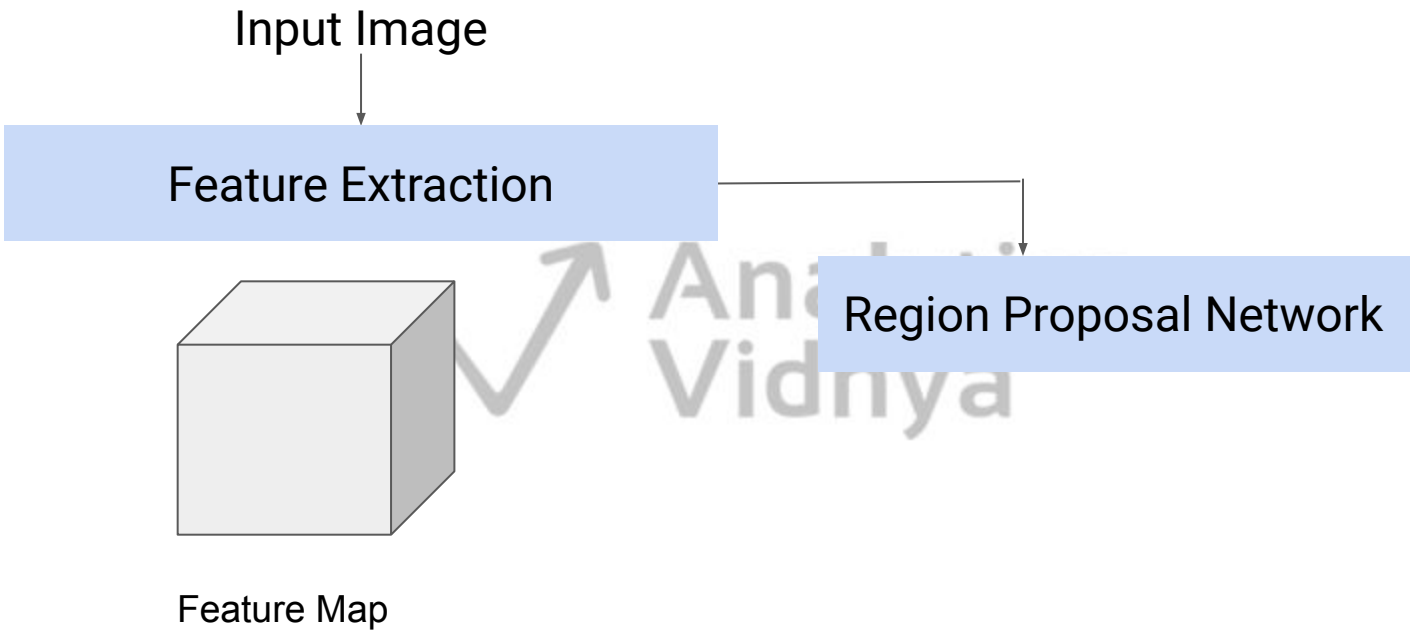
Solution?

- Use Convolutional Block for region proposals

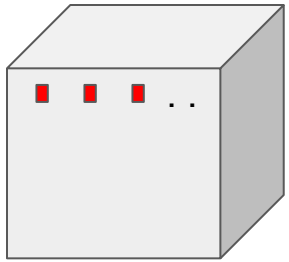
Faster R-CNN



Faster R-CNN



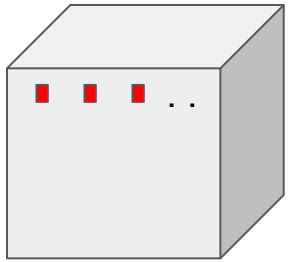
Anchor Boxes in Faster R-CNN



Feature Map

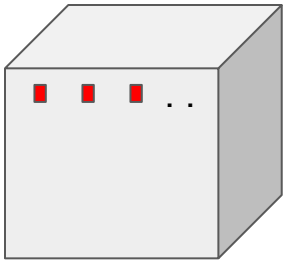
Analytics Vidhya

Anchor Boxes in Faster R-CNN

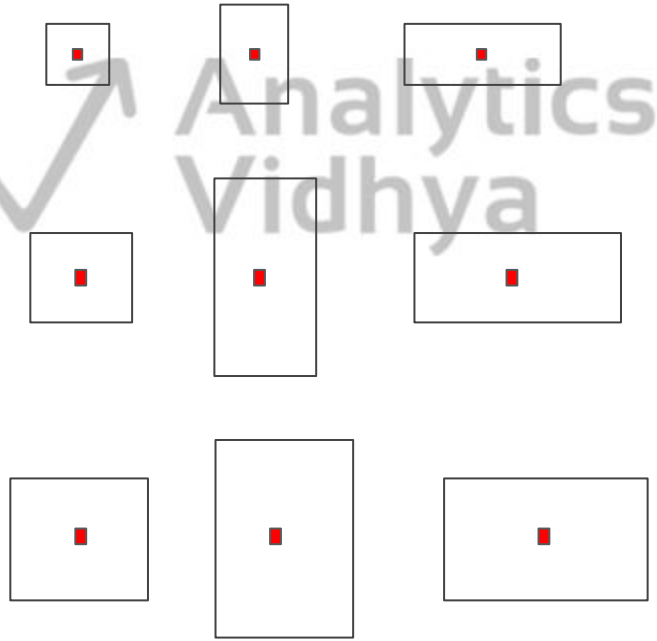


Feature Map

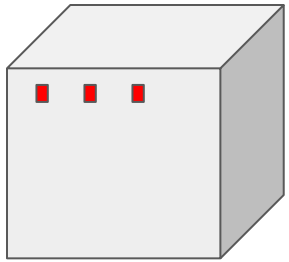
Anchor Boxes in Faster R-CNN



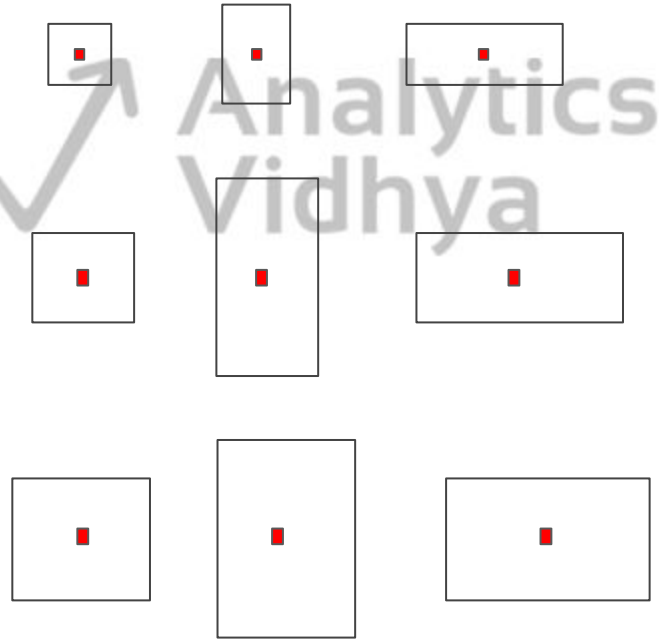
Feature Map



Anchor Boxes in Faster R-CNN

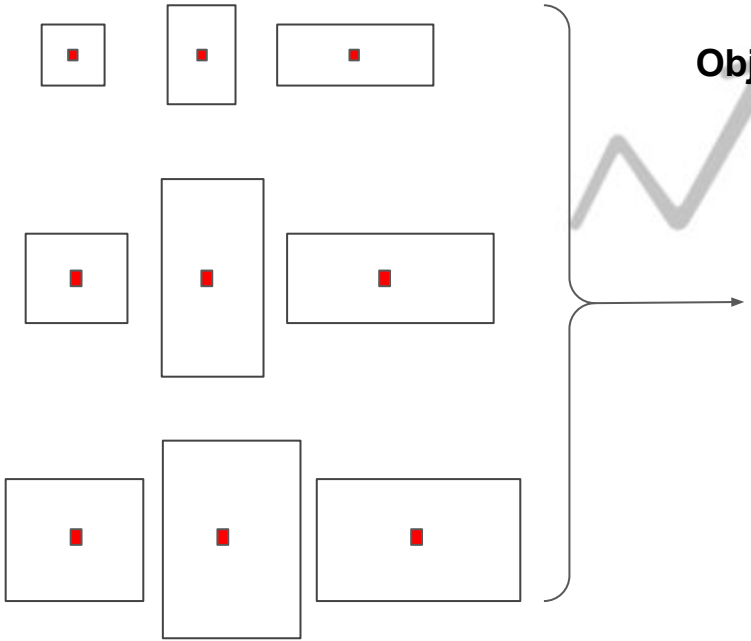


Feature Map



Input to RPN

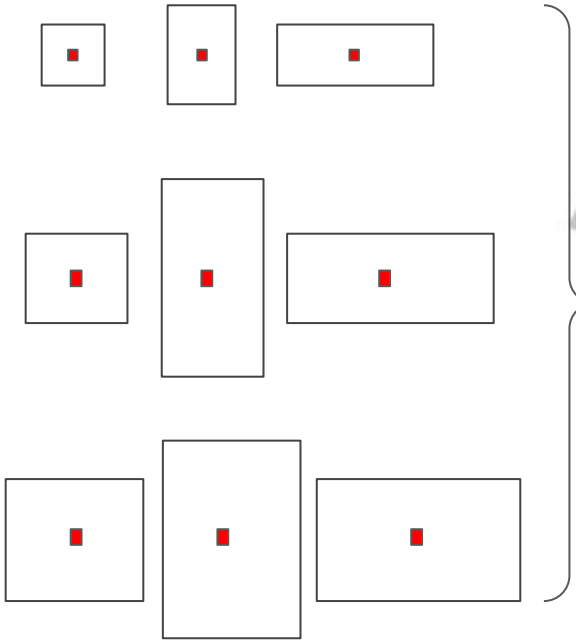
Faster R-CNN - Region Proposal Network



Region Proposal Network

Objective: Does the Anchor Box have an object or not?

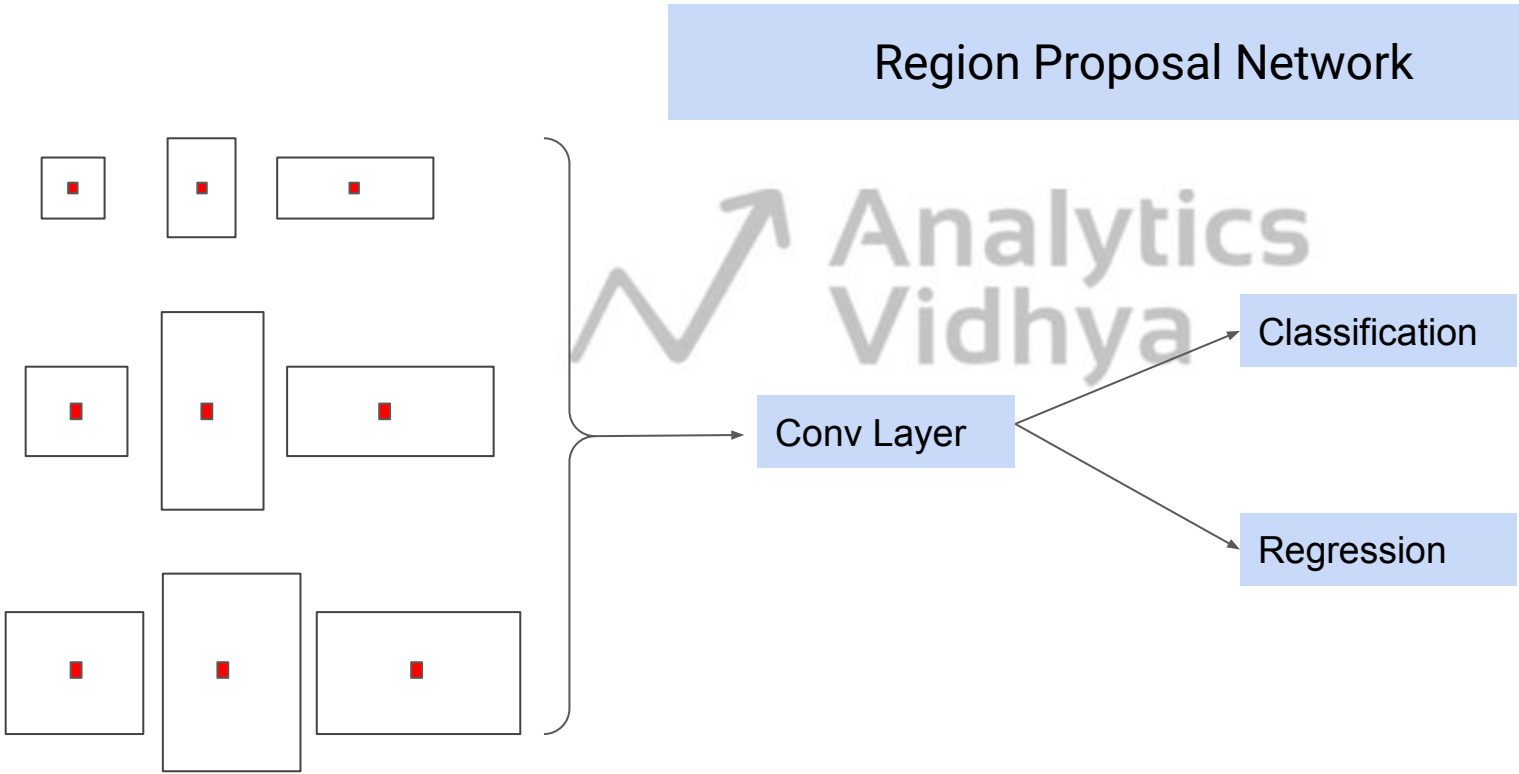
Faster R-CNN - Region Proposal Network



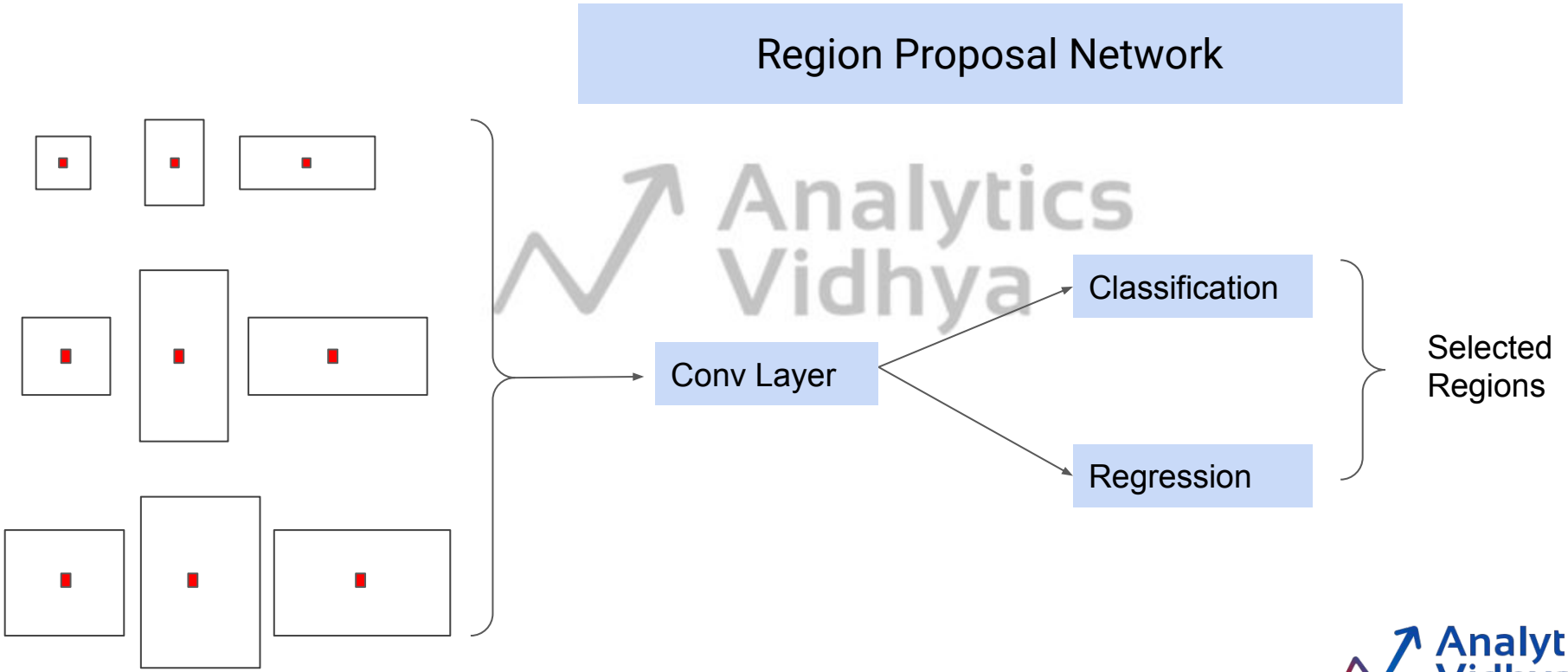
Region Proposal Network

Conv Layer

Faster R-CNN - Region Proposal Network



Faster R-CNN - Region Proposal Network



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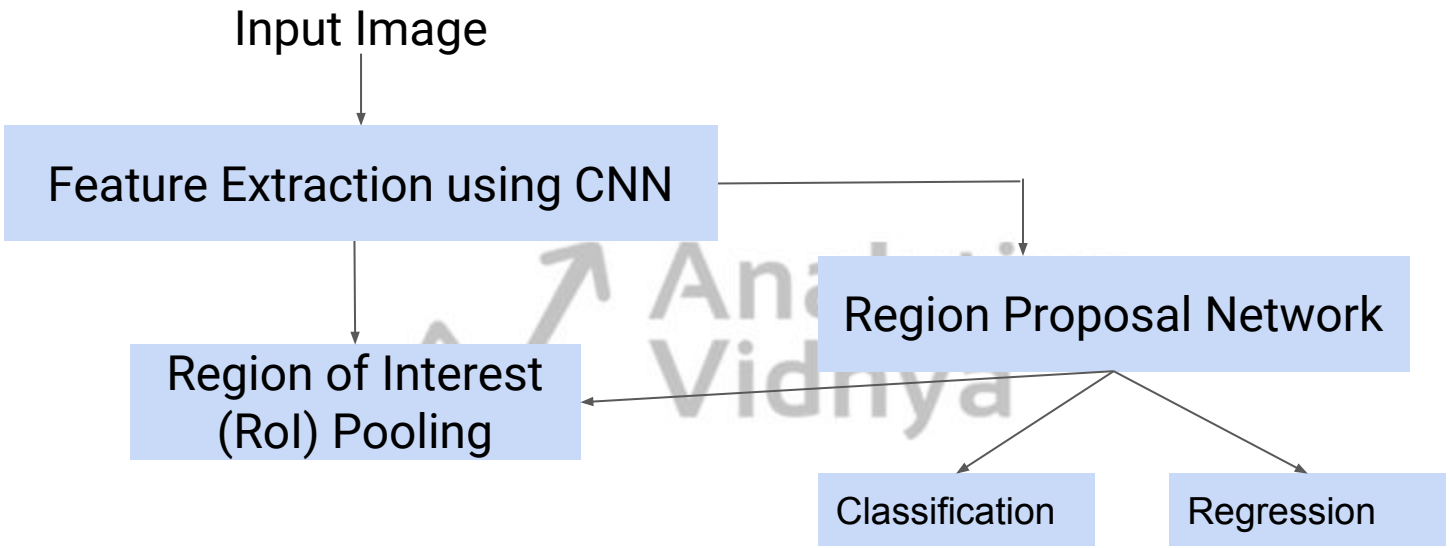

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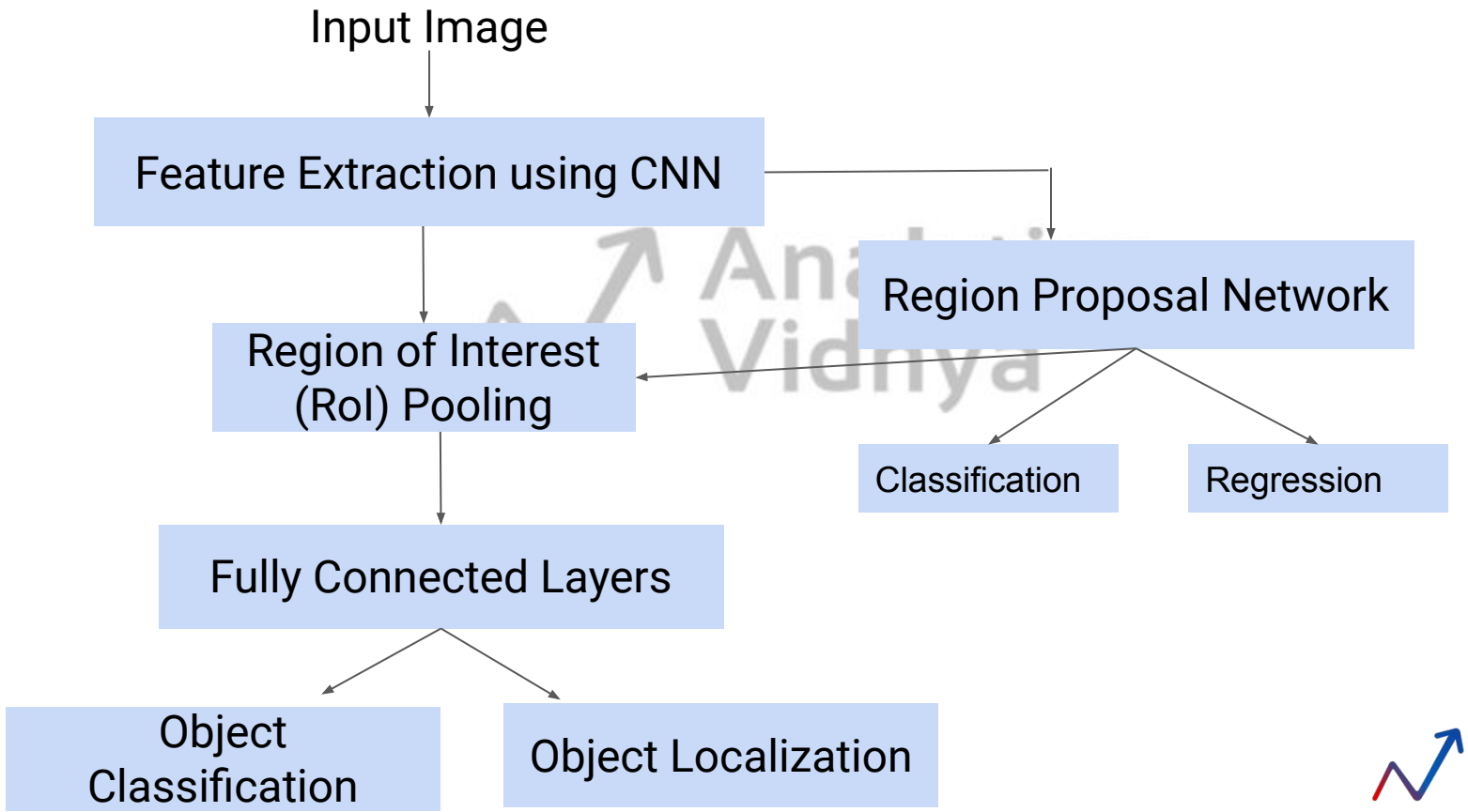

Thank You

Analytics Vidhya

Faster R-CNN - Region Proposal Network

- 3×3 convolutional layer with a padding of 1 and stride =16
- Region Proposal Network is trained along with rest of the model
- Objective - Learn to generate high-quality proposed regions