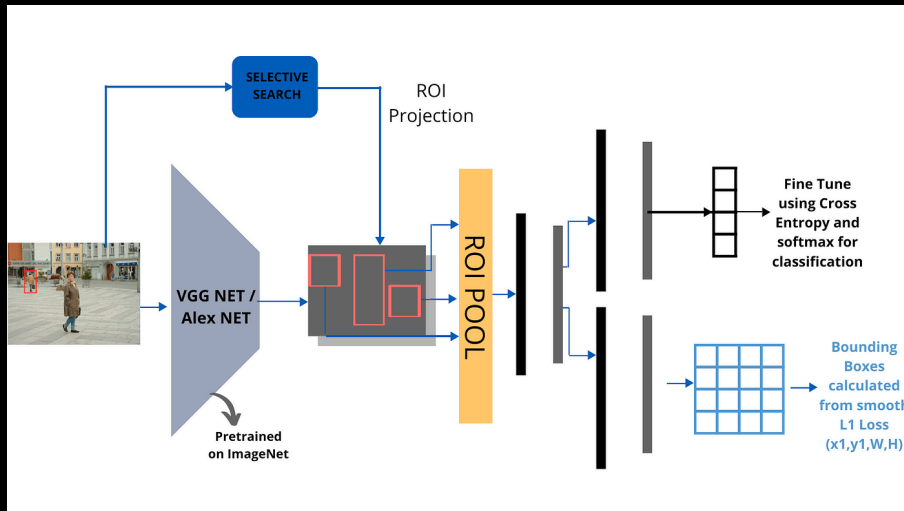


Fast R-CNN is designed to detect objects and classify them while simultaneously refining the bounding box locations. Unlike R-CNN, which performs separate forward passes for each region proposal, Fast R-CNN significantly speeds up the process by using a shared feature map.



## Pipeline

1) Input Image Processing  
 \* Directly to CNN  
 \* Selective Search

2) Region Proposal Extraction

\* No External SS (RPN)

3) ROI Pooling

\* Feature Maps are used to generate

ROI features

Fixed Size Region Proposal

4) Fully Connected  
\* Pooled features are passed directly

5) Simultaneously Classification + Bbox Regress  
\* Softmax

### Advantages

- 1) Speed Improvement
- 2) End to End Training
- 3) Better Accuracy than RCNN / SPP Net
- 4) Memory Efficient

### Disadvantages

- 1) Selective Search
- 2) Not Real Time
- 3) No Region Proposal Learning

