Why is unpooling better-suited for limited memory devices than transposed convolutions?

Unpooling only needs pooling indices, which can be done with a few bits. Transposed convolutions in U-Net like architectures need to store encoder feature maps, which consumes memory.

State one main advantage and one limitation of dilated convolutions in semantic segmentation.

Advantage: wider receptive field. Disadvantage: greater memory consumption.

What is the advantage of pyramid pooling over global average pooling?

Provides regional context besides global context, which helps encode spatial relationships.

State the reasons that RoI pooling in Fast R-CNN improves training and makes inference faster.

Allows training feature extractor and detector together. Only one forward pass through feature extractor for the entire image.
State two advantages of anchors in Faster R-CNN.

Spatial localization of overlapping objects, multi-scale bounding boxes.

What is the need for RoI-Align in Mask R-CNN?

More accurately localized boundaries are needed.

Optional: Enter your name if you choose to be non-anonymous.

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