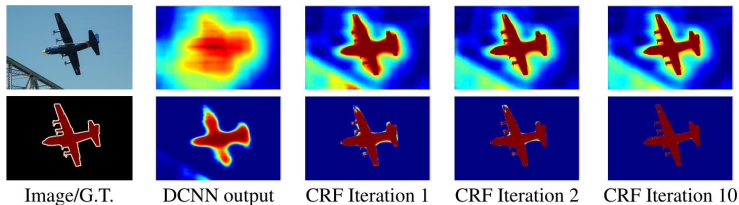# Semantic Image Segmentation
with Deep Convolutional Nets and Fully Connected CRFs
LC. Chen, G. Papandreou, I. Kokkinos, K. Murphy and A. L. Yuille (ICLR 2015)

Image/G.T. DCNN output CRF Iteration 1 CRF Iteration 2 CRF Iteration 10

- ▶ Final layer of CNNs not sufficiently localized for accurate pixel-level object segmentation
- ▶ Overcome poor localization by combining final CNN layer with fully connected Conditional Random Field [1]
- ▶ Using a fully convolutional VGG-16 network
- ▶ Modified convolutional filters by applying the 'atrous' algorithm from wavelet community instead of subsampling
- ▶ Significantly advanced the state-of-the-art in PASCAL VOC 2012 in semantic segmentation

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[1]Krahenbuhl, P. and Koltun, V. Efficient inference in fully connected crfs with gaussian edge potentials. In NIPS, 2011.