

Title: Deep Weakly Supervised Learning in Computer Vision

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Abstract: The success of deep learning in computer vision is partly attributed to the construction of large-scale annotated datasets such as ImageNet. However, computer vision problems often require substantial amount of human efforts to obtain accurate annotations due to dynamic aspects of class labels, needs for pixel-level labeling, and annotation ambiguities. Hence, collecting high quality large-scale annotated datasets is very time consuming and even unrealistic. This talk mainly discusses a particular problem in computer vision, semantic segmentation, which can derive benefit from weakly supervised learning. Specifically, I present two weakly supervised semantic segmentation algorithms investigated in POSTECH Computer Vision Laboratory; one is based on semi-supervised few-shot learning and the other is a transfer learning approach. Both algorithms have unique architectures of convolutional neural networks, and achieve the state-of-the-art performance in PASCAL VOC dataset.