

# Bottom-Up and Top-Down Reasoning with Hierarchical Rectified Gaussians

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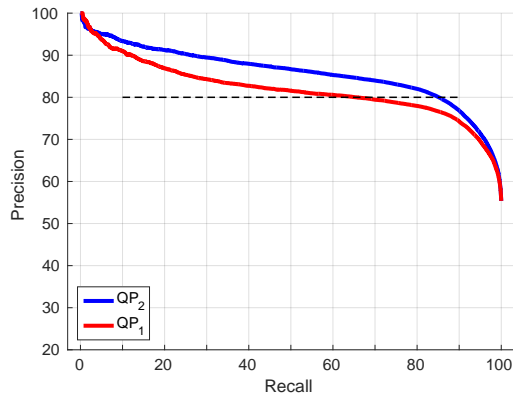


Figure 1: Keypoint visibility prediction on Pascal Person (a dataset with significant occlusion and truncation), measured by precision-recall curves. At 80% precision, our top-down model ( $QP_2$ ) significantly improves recall from 65% to 85%.

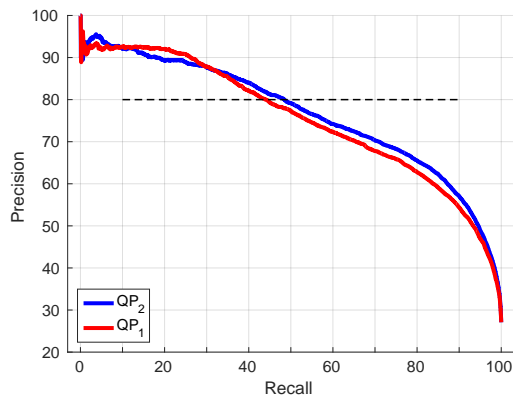


Figure 2: Keypoint visibility prediction on MPII, measured by precision-recall curves. At 80% precision, our top-down model ( $QP_2$ ) improves recall from 44% to 49%.

**Visibility Predictions:** We show the keypoint visibility prediction of our models on Pascal Person (Fig. 1) and MPII (Fig. 2).

**Qualitative Examples** We visualize qualitative examples produced by our models on AFLW (Fig. 3).

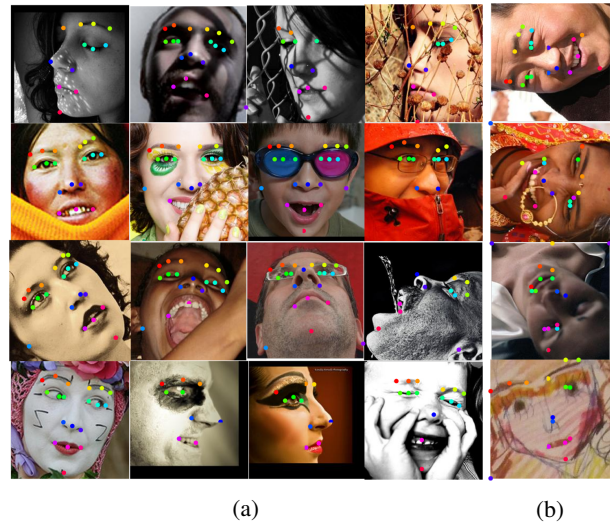


Figure 3: Facial landmark localization results of  $QP_2$  on AFLW, where landmark ids are denoted by color. We only plot landmarks annotated visible. Our bidirectional model is able to deal with large variations in illumination, appearance and pose (a). We show images with multiple challenges present in (b).