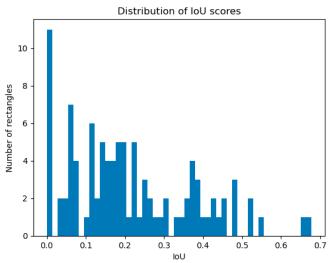
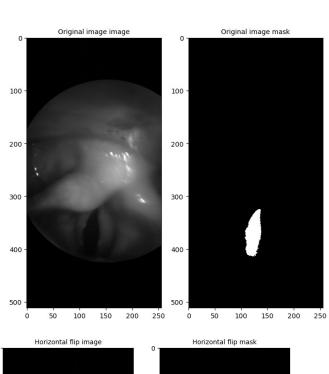
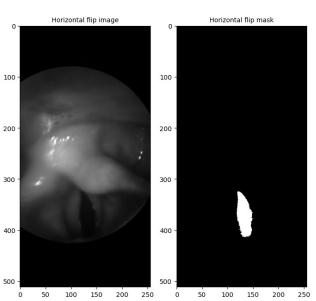
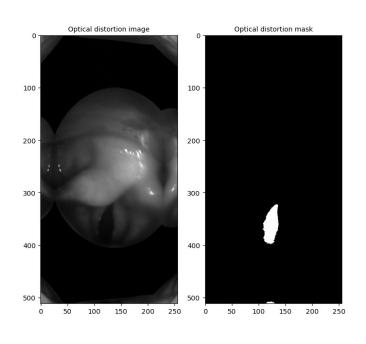
## Homework 6

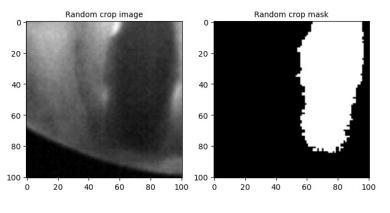
```
def calculate_iou(rect1, rect2):
# Extract coordinates and dimensions from rectangles
x1, y1, w1, h1 = rect1
x2, y2, w2, h2 = rect2
# Calculate coordinates of intersect rectangle
intersect_x1 = max(x1, x2)
intersect_y1 = max(y1, y2)
intersect_x2 = min(x1 + w1, x2 + w2)
intersect_y2 = min(y1 + h1, y2 + h2)
# Calculate area of intersect rectangle
intersect_area = max(0, intersect_x2 - intersect_x1) * max(0, intersect_y2 - intersect_y1)
area rect1 = w1 * h1
area_rect2 = w2 * h2
# Calculate union area
union_area = area_rect1 + area_rect2 - intersect_area
# Calculate IOU
iou = intersect_area / union_area if union_area > 0 else 0
return iou
```

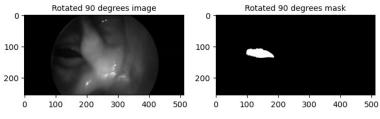












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