

Supplementary Material: Lorentz Entailment Cone for Semantic Segmentation

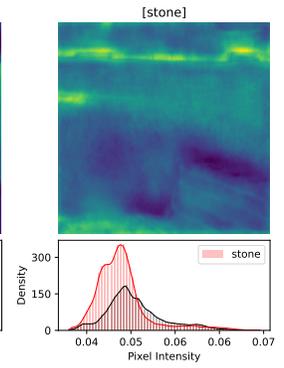
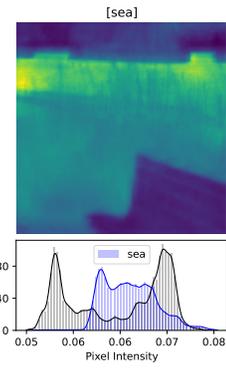
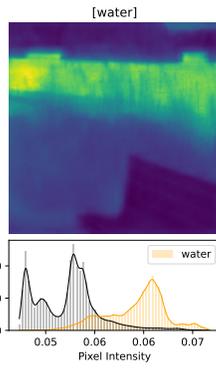
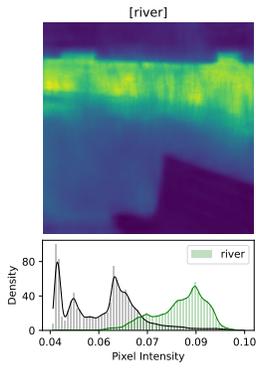
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We present detailed qualitative results for text-query-based mask retrieval. In each row, the first column shows the original image, and the second column displays the heatmap from the original class query. Subsequent columns depict masks retrieved using different text queries, with each query shown at the top. For each mask, we provide the corresponding intensity computed as $\exp(-\text{ext}(\mathbf{x}, \mathbf{y})/\tau)$. We observe that the original class query yields the most confident predictions with clear object-background separation, while irrelevant queries lead to reduced separation and lower confidence.

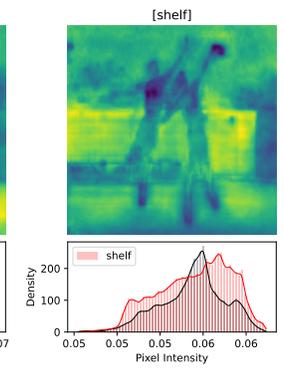
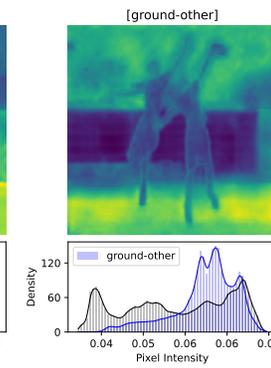
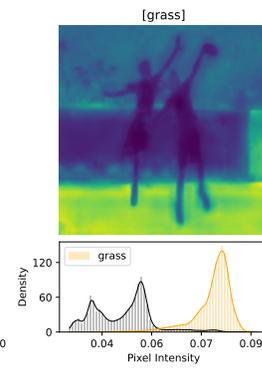
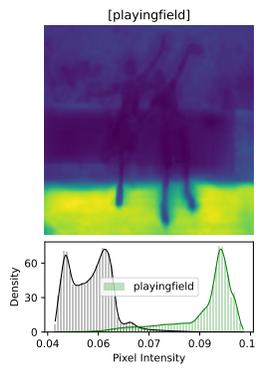
*Corresponding author: zhasan3@umbc.edu



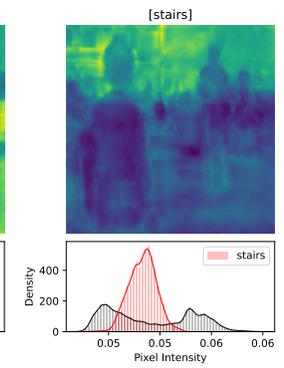
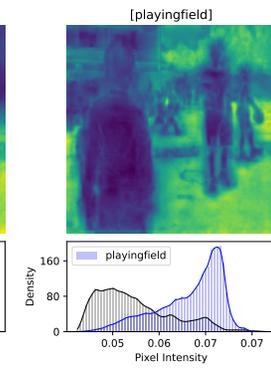
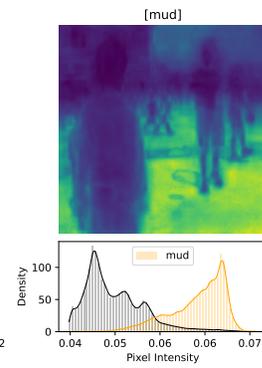
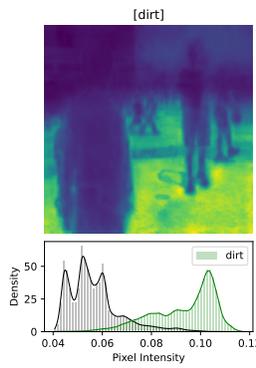
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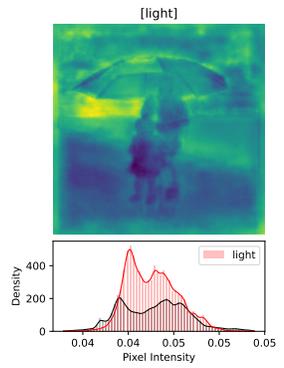
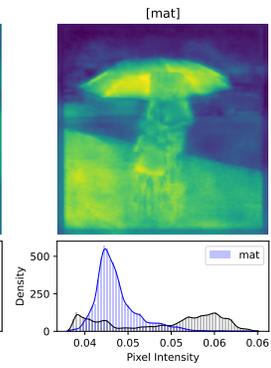
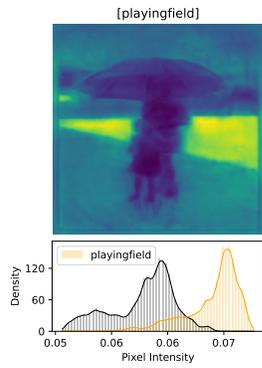
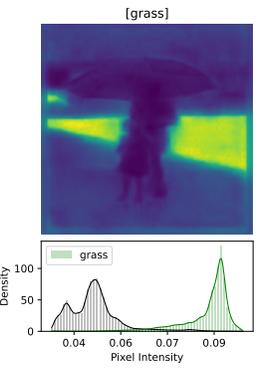
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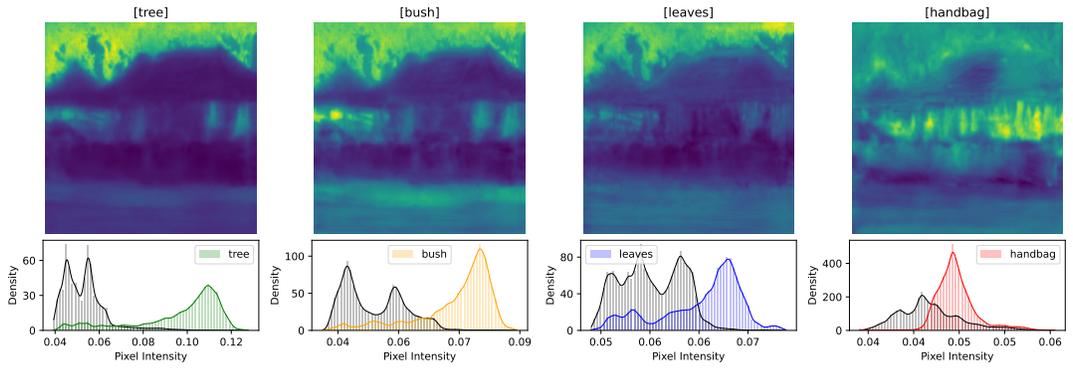


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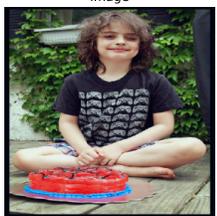
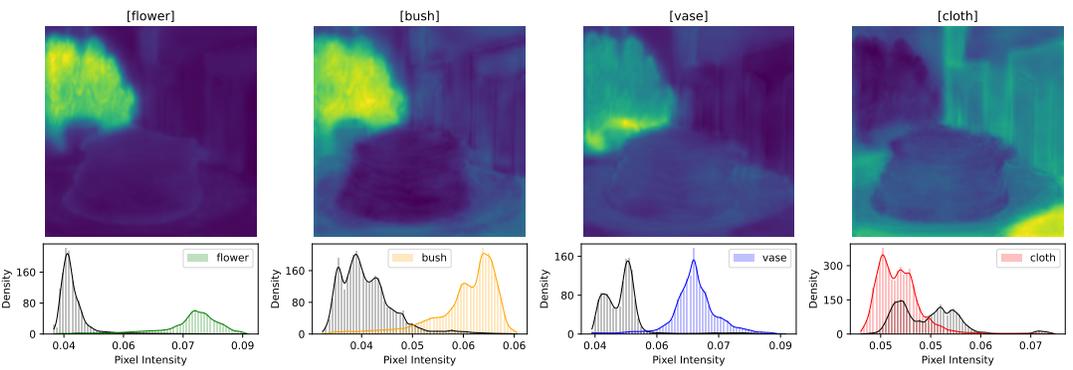




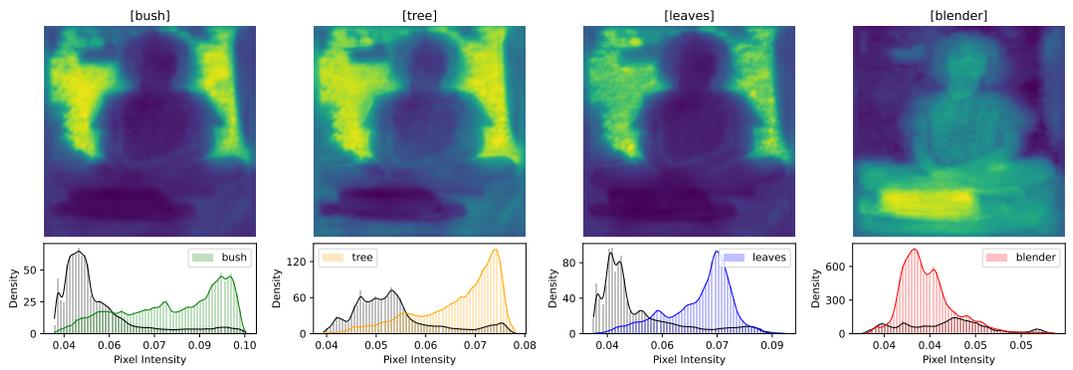
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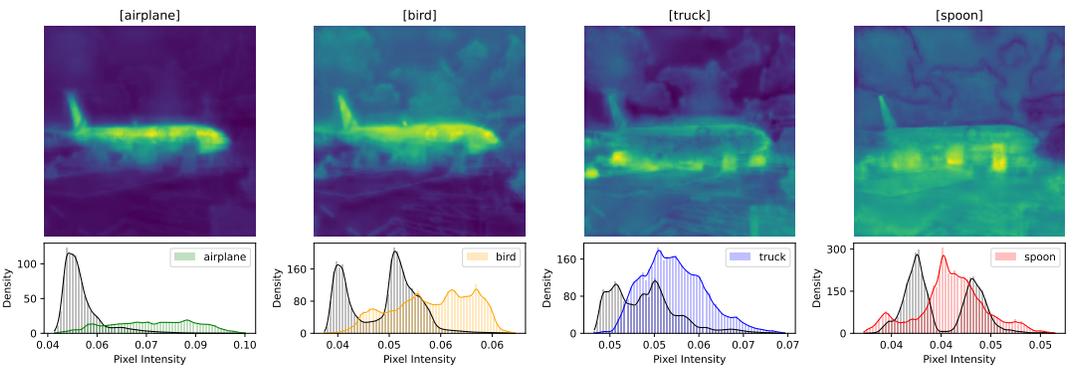
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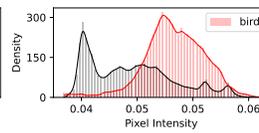
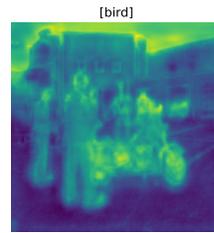
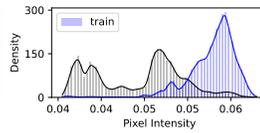
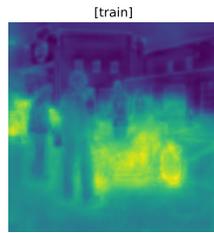
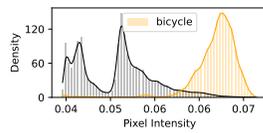
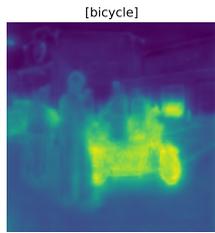
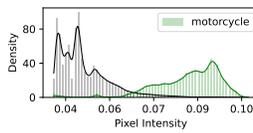
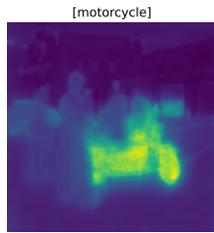


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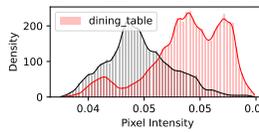
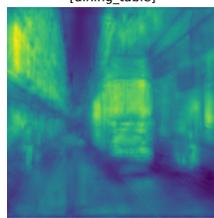
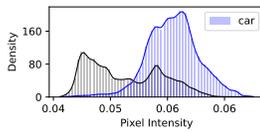
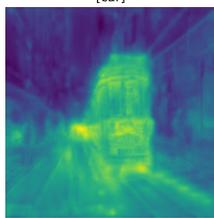
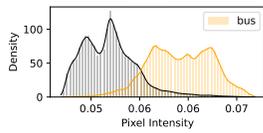
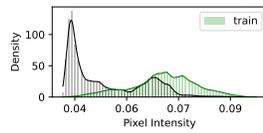
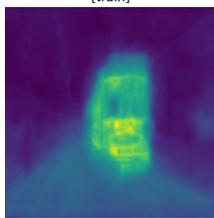




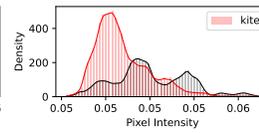
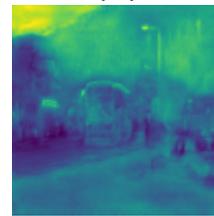
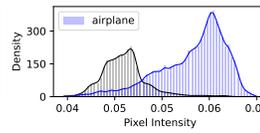
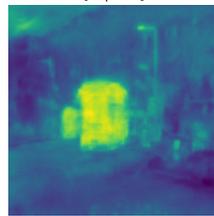
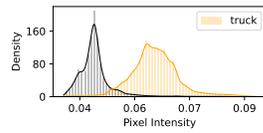
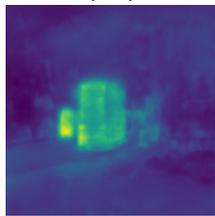
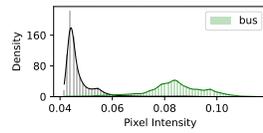
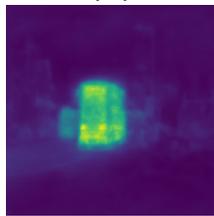
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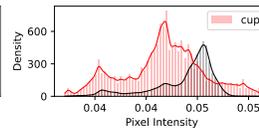
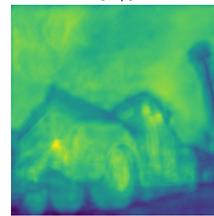
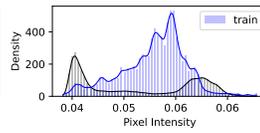
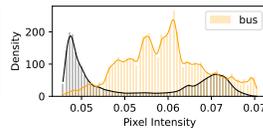
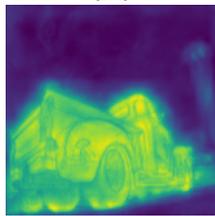
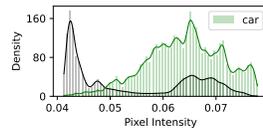
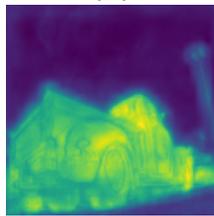
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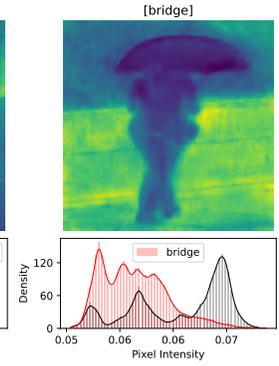
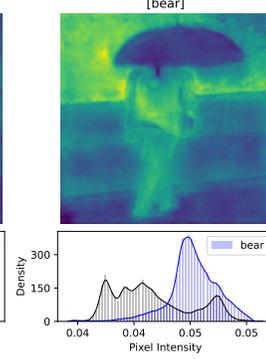
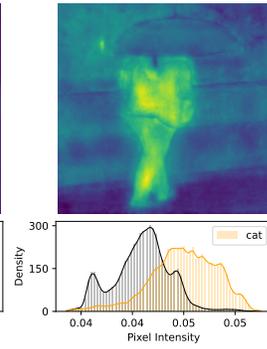
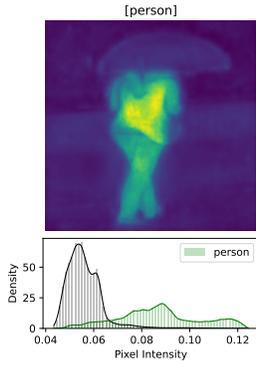


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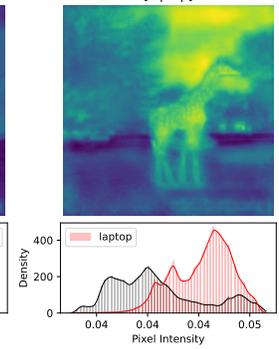
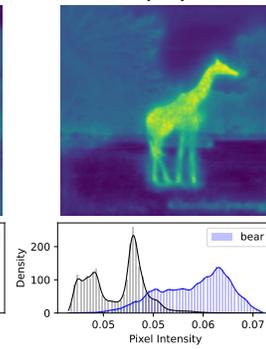
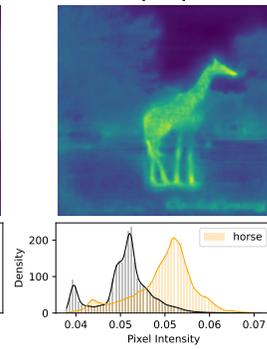
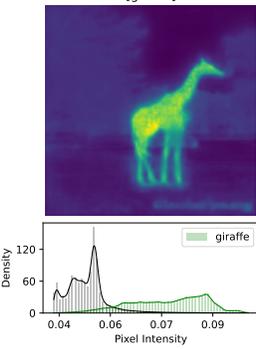




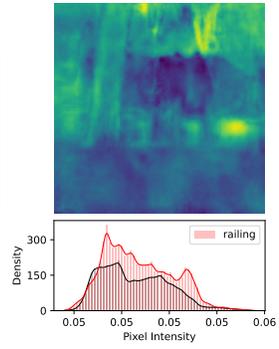
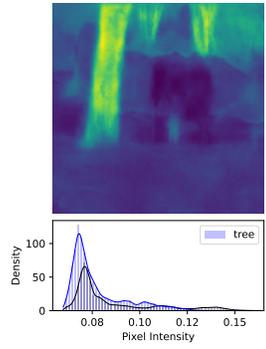
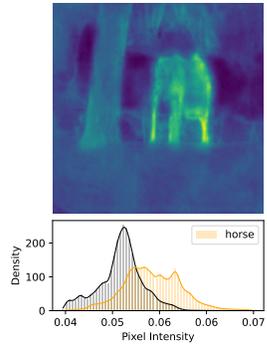
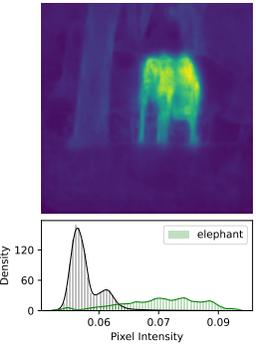
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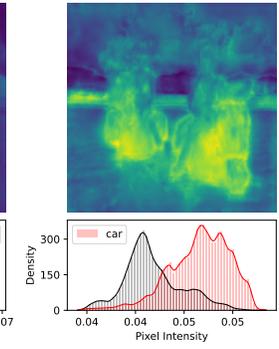
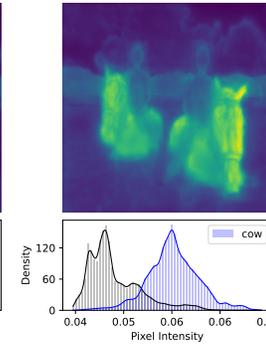
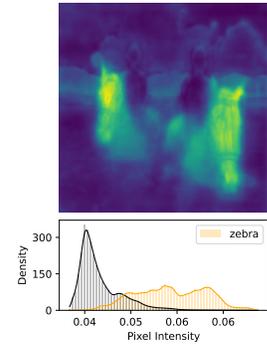
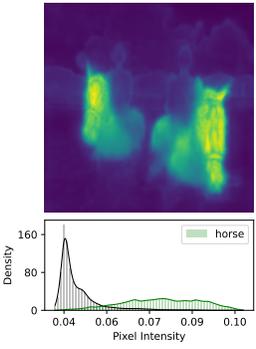
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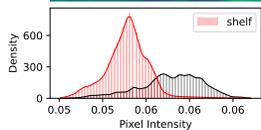
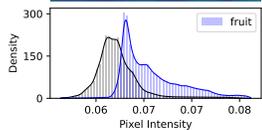
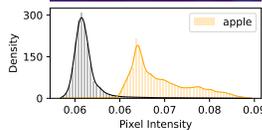
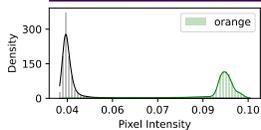
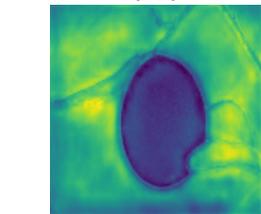
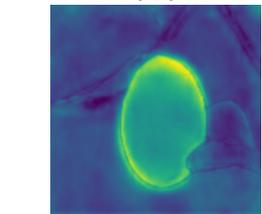
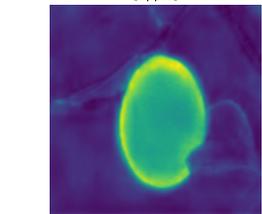
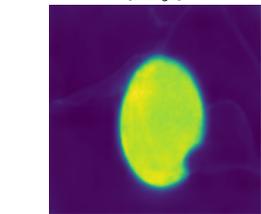
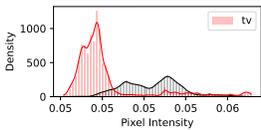
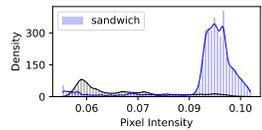
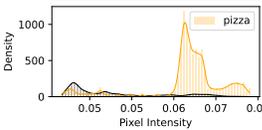
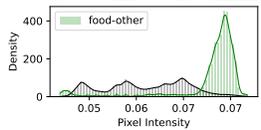
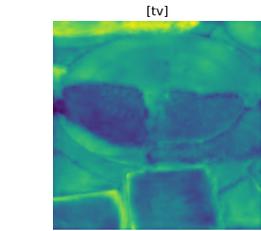
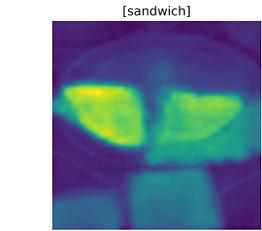
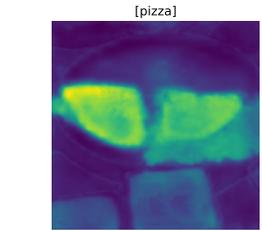
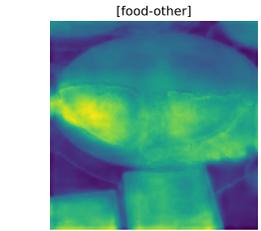
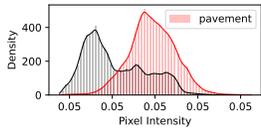
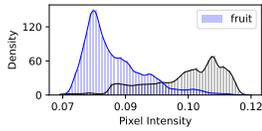
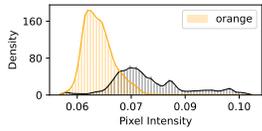
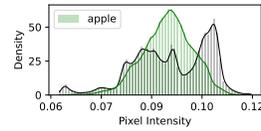
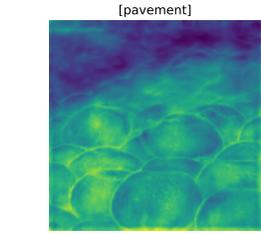
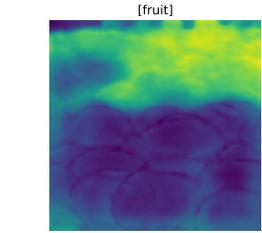
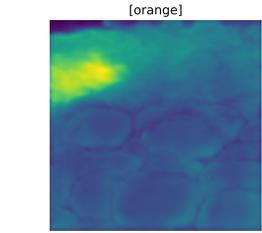
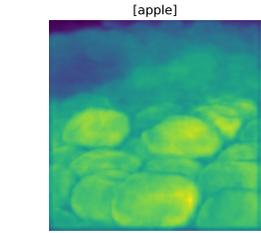
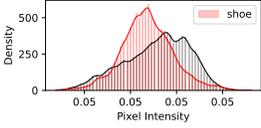
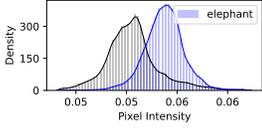
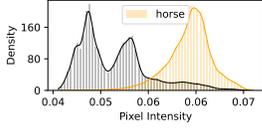
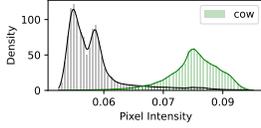
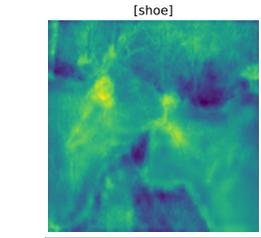
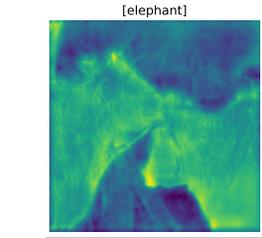
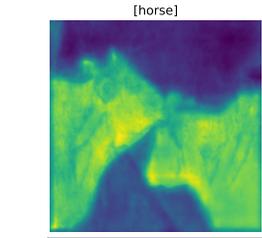
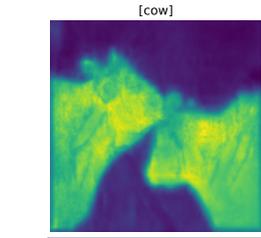


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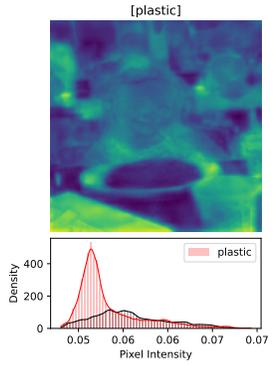
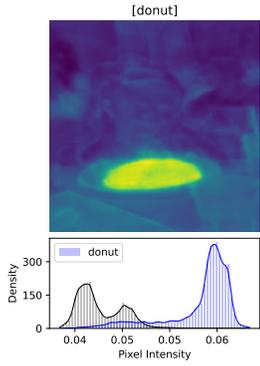
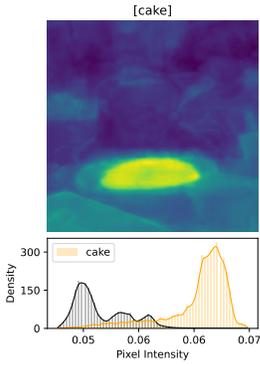
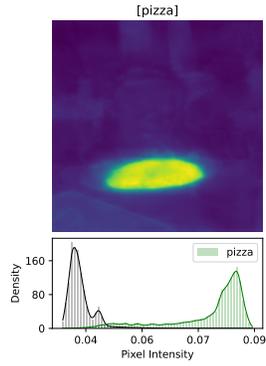
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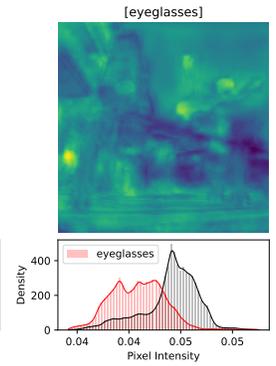
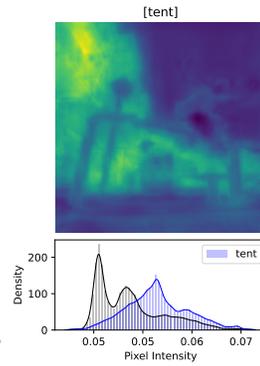
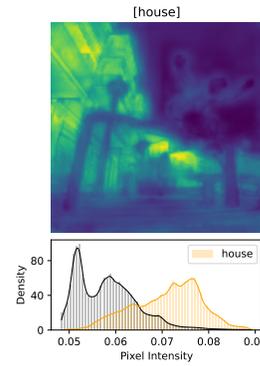
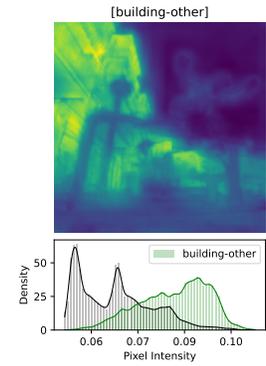




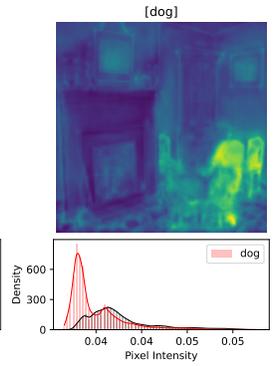
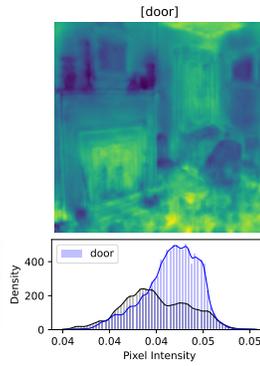
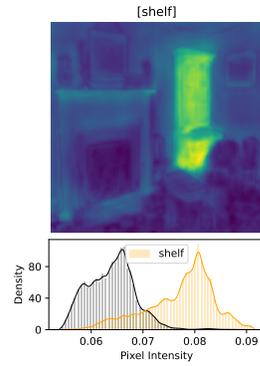
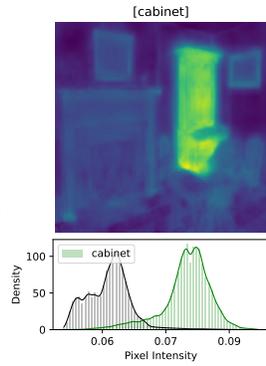
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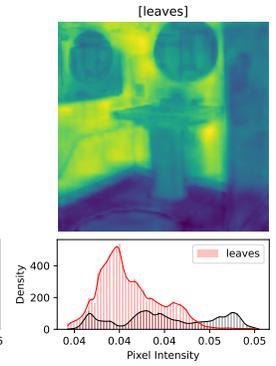
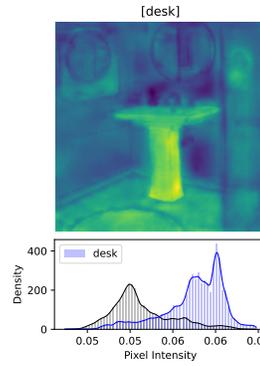
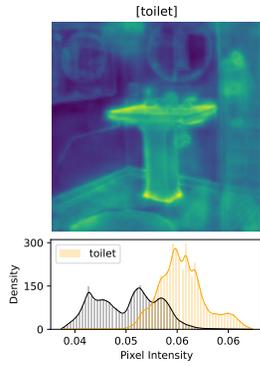
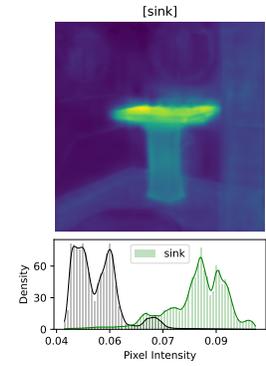
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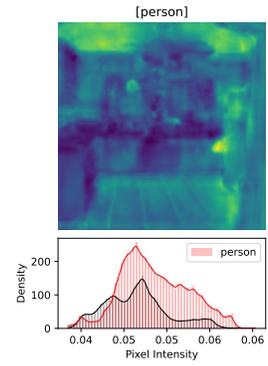
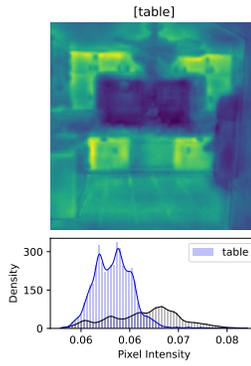
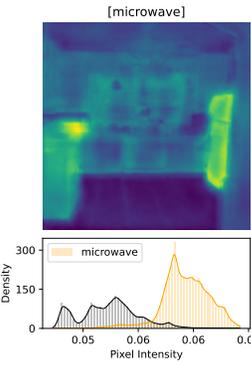
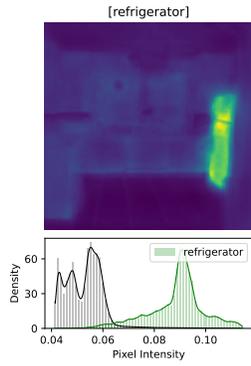


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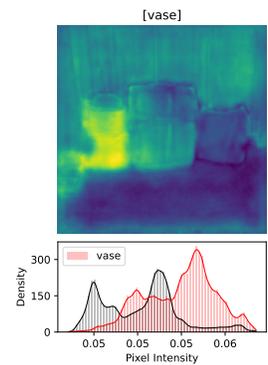
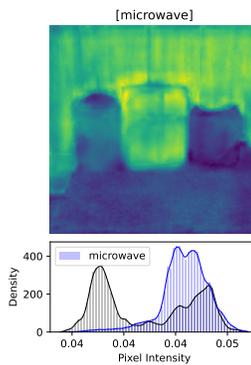
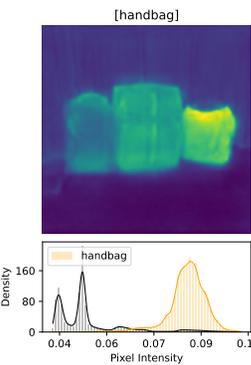
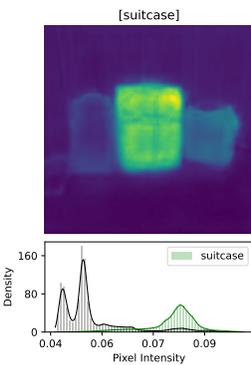




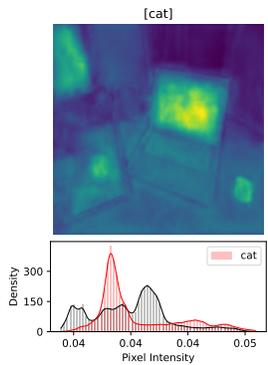
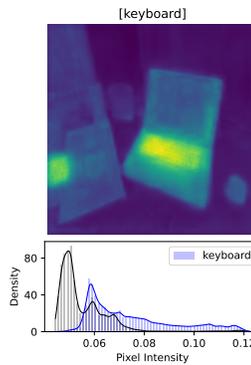
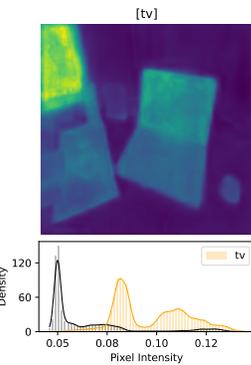
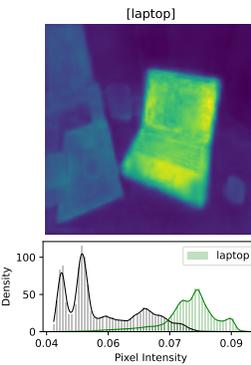
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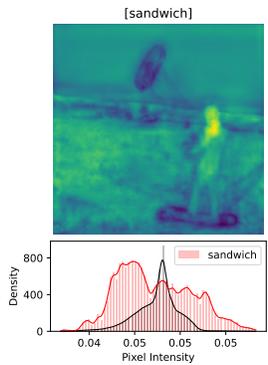
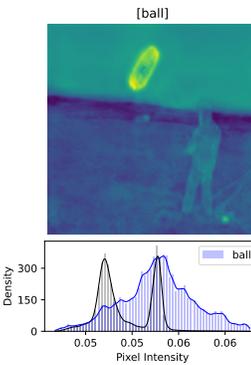
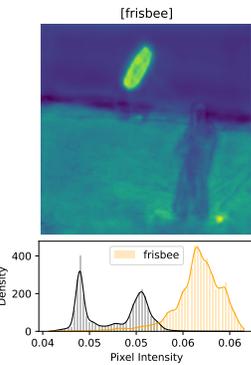
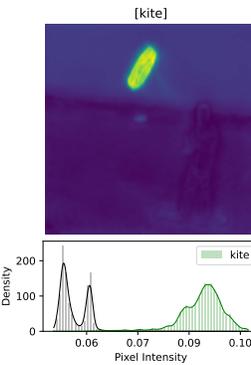
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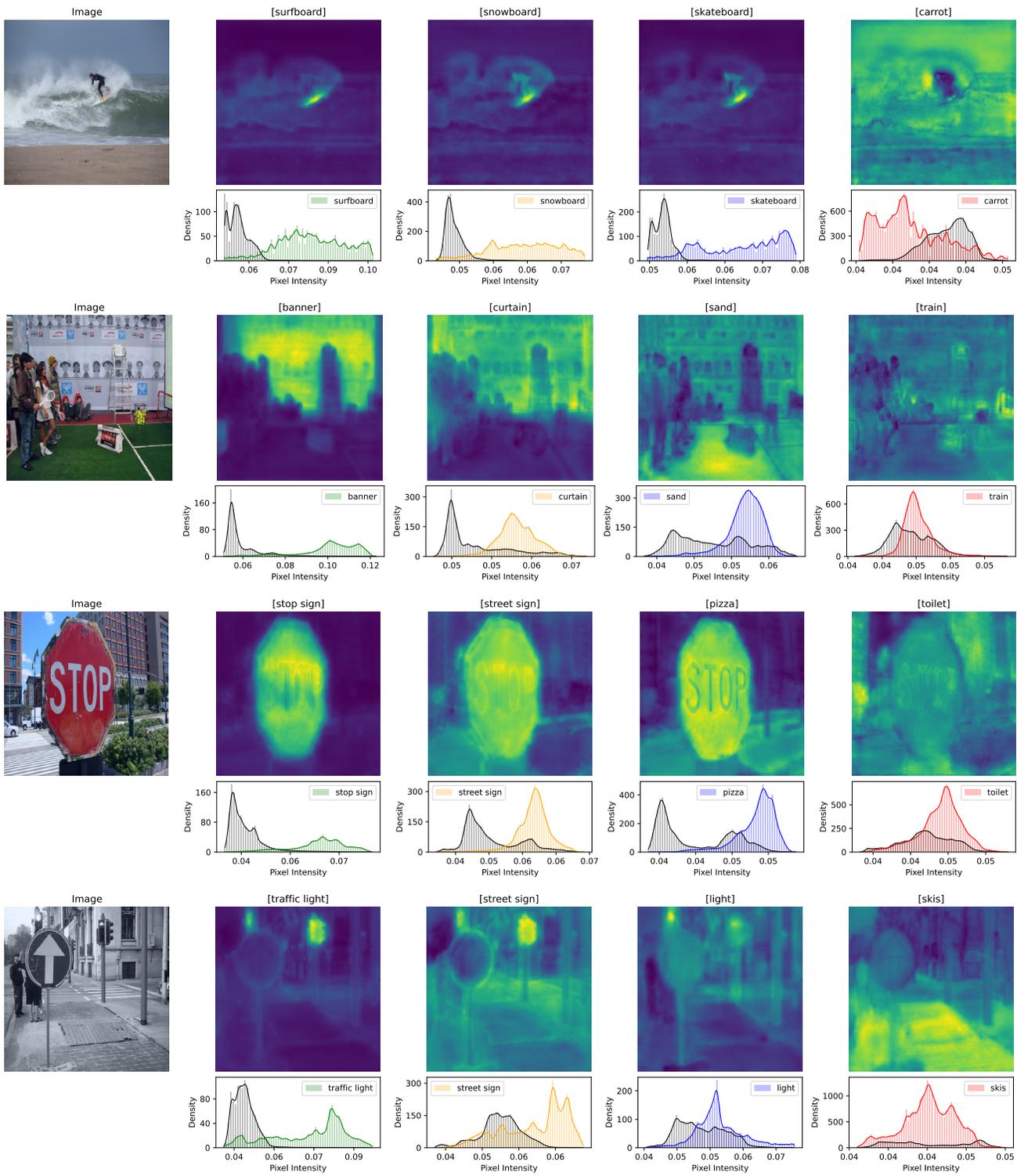
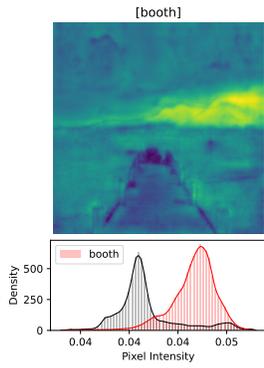
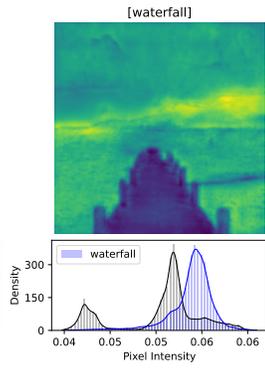
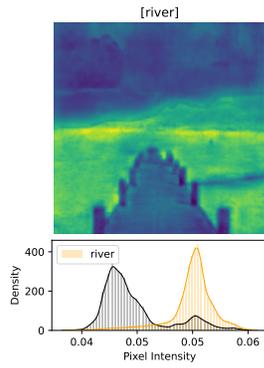
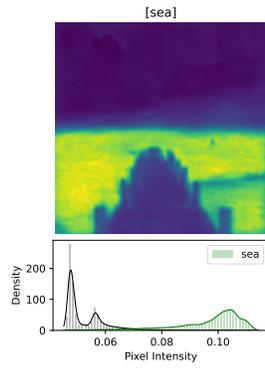


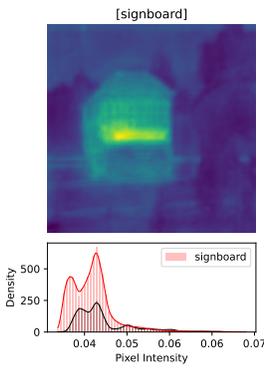
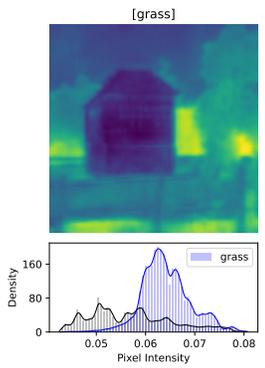
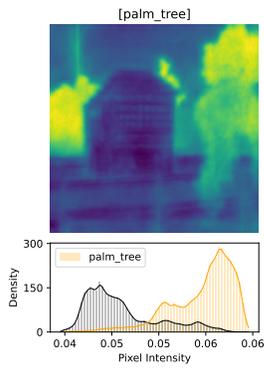
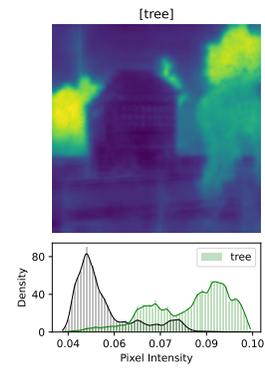
Figure 1. Coco dataset



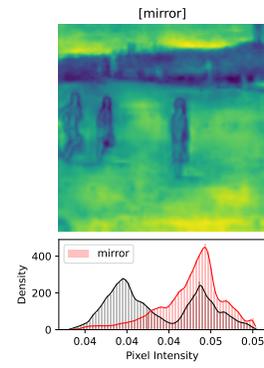
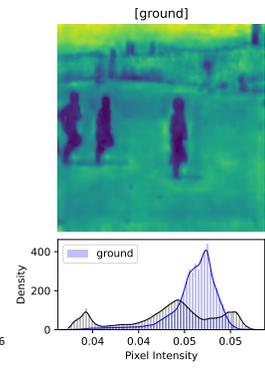
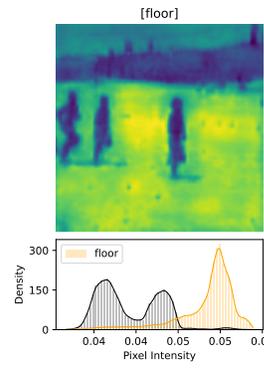
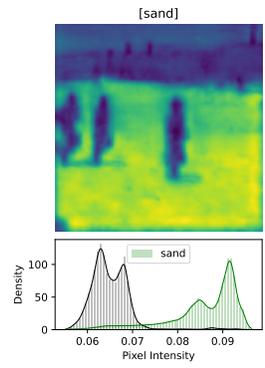
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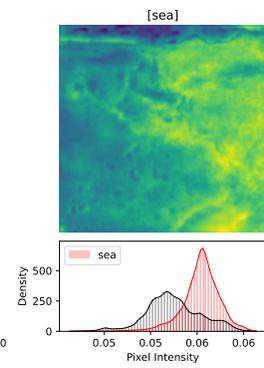
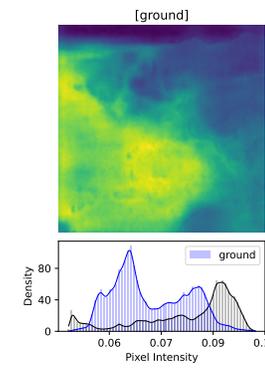
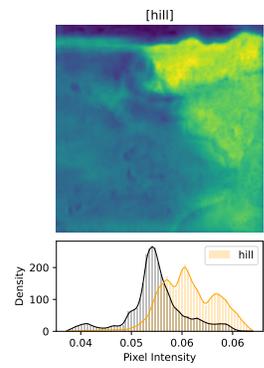
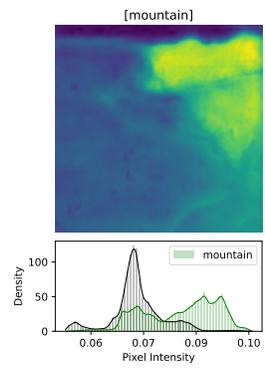
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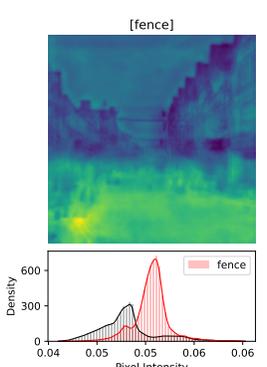
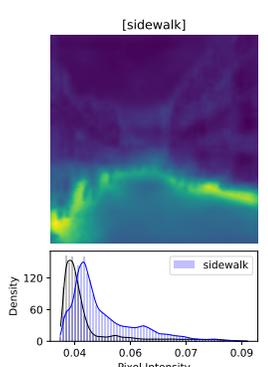
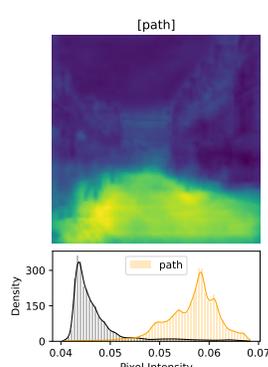
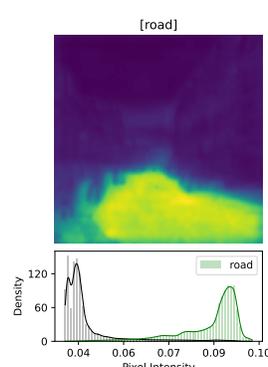
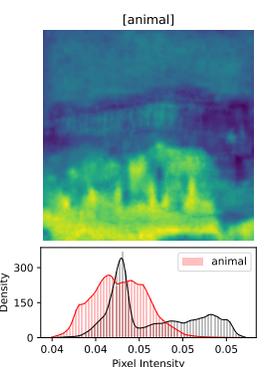
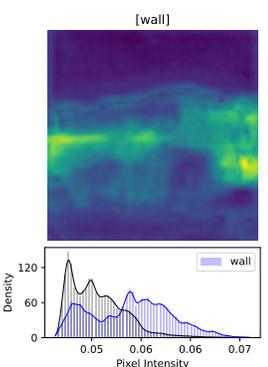
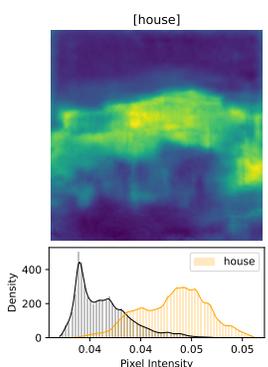
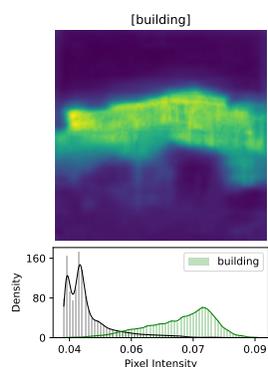
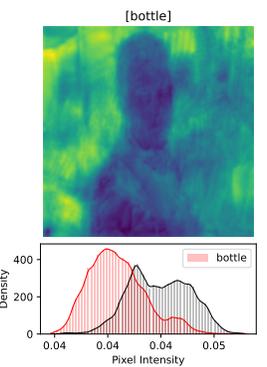
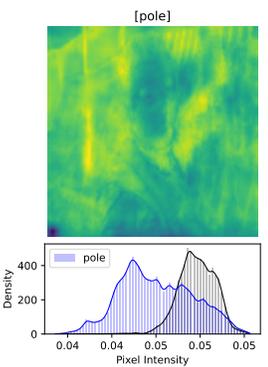
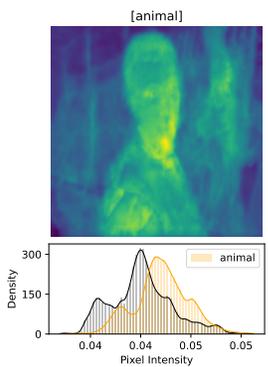
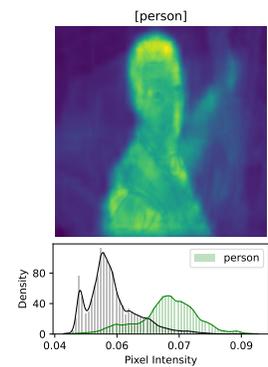
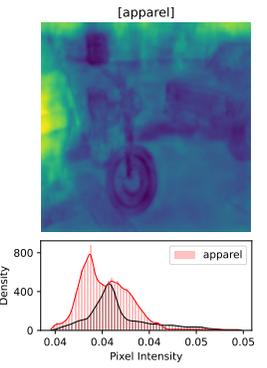
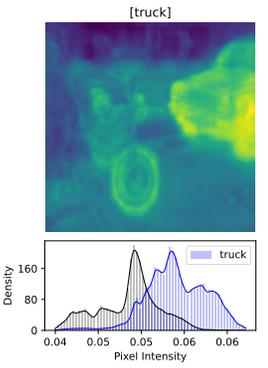
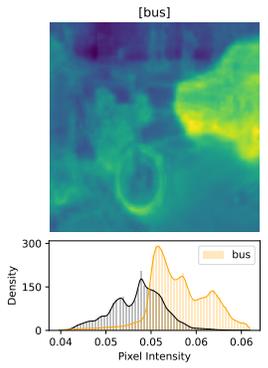
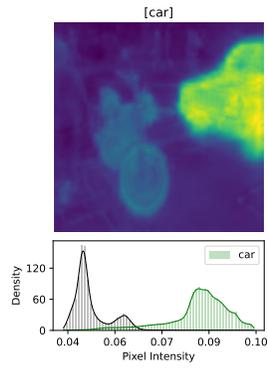


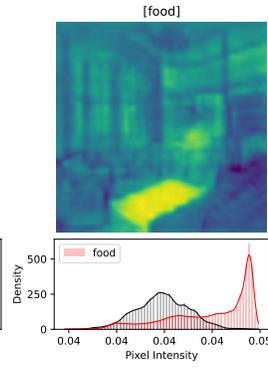
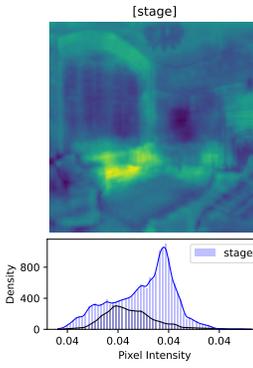
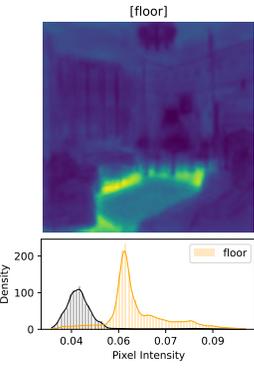
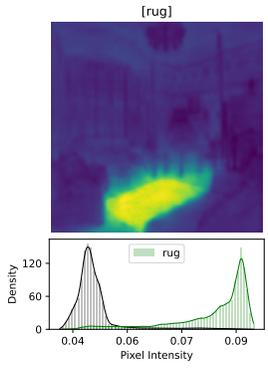
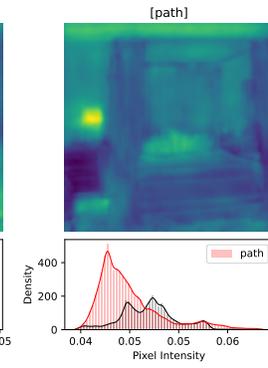
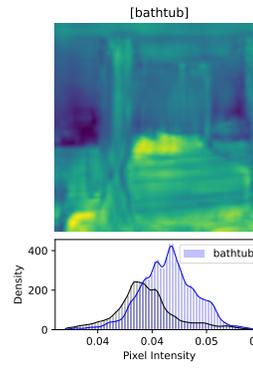
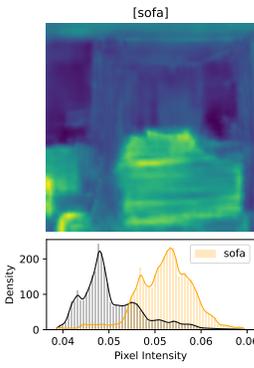
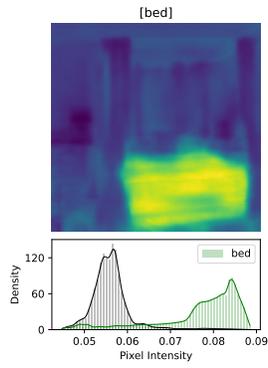
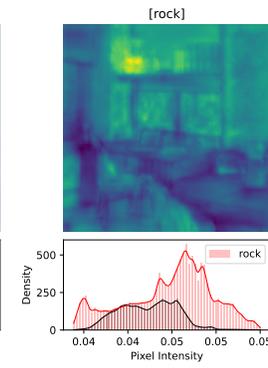
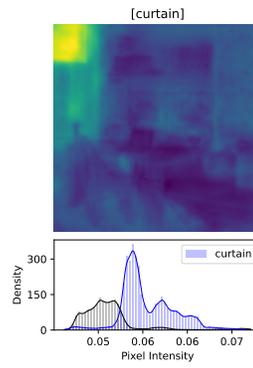
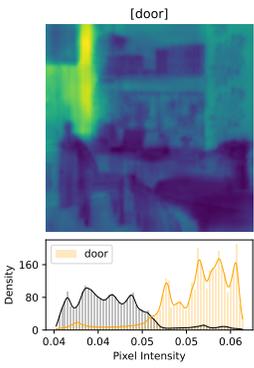
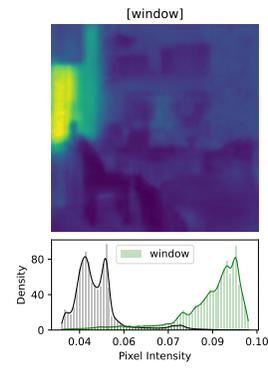
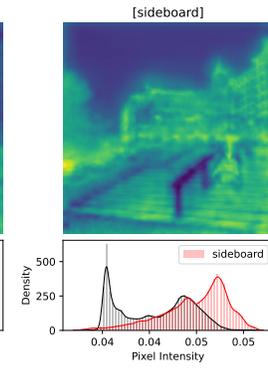
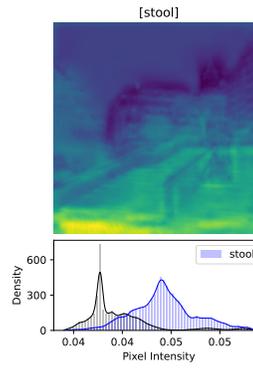
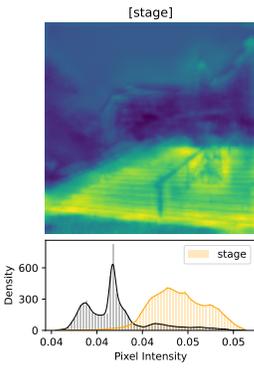
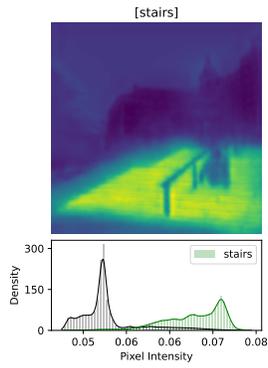
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Image







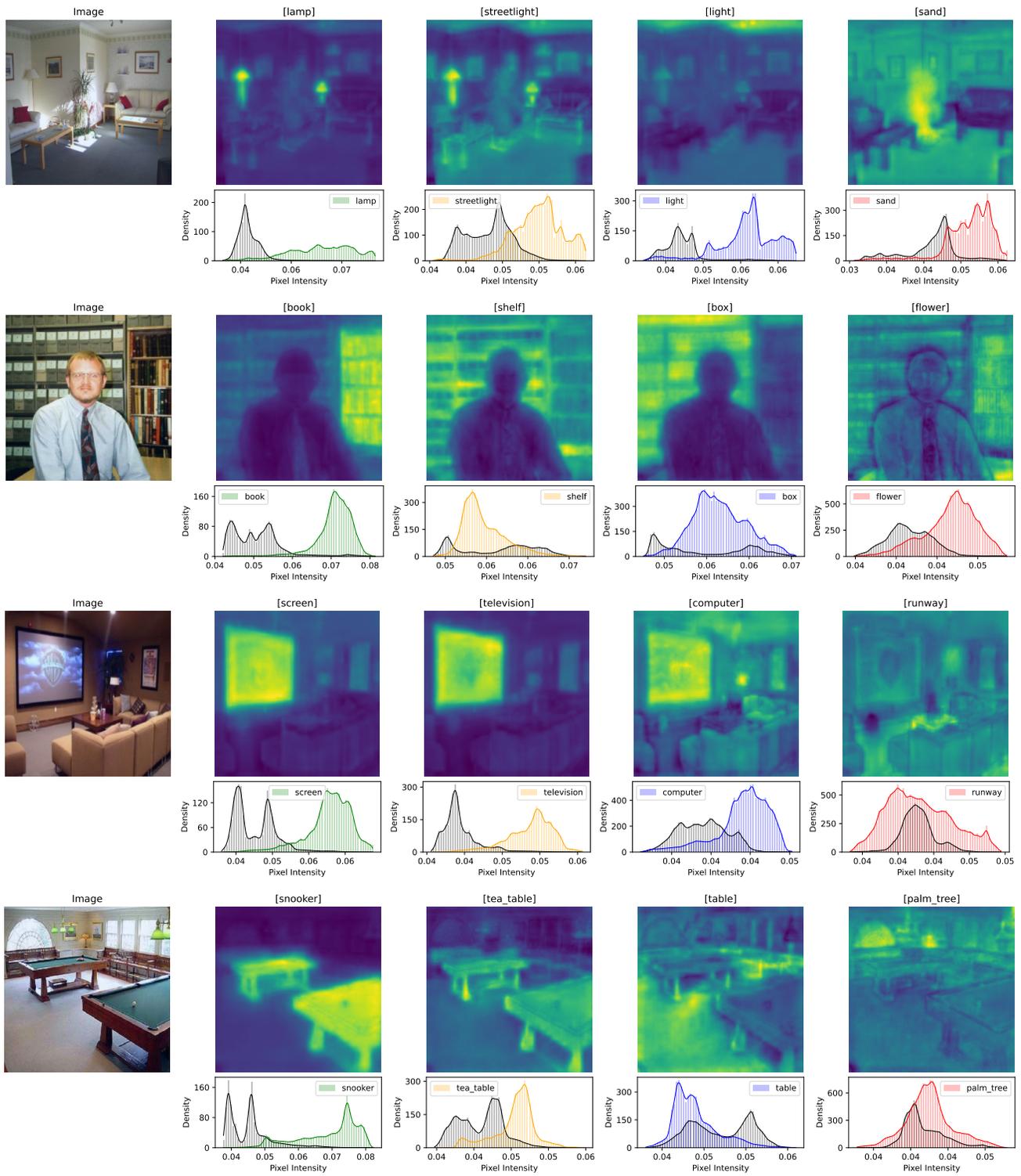


Figure 2. ADE dataset