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This study [1] proposes a visualization that depicts the internal information processed by an autonomous vehicle so that the user, with a reduced cognitive load, can access that information and decide whether or not to trust the vehicle's next set of steps and take control of the vehicle to themselves. It allows the users to perceive the vehicle's detection capabilities and the authors processed the semantic segmentation of road scene images for image classification based on pixels. They use color hue for categorical attributes to show the color distributions of the object visualization. Also, different shapes are used as identity channels to show dynamic and static objects. Furthermore, box plots and violin plots are used to show the distribution of data points. More specifically violin plots are used to show the perceived ability to detect dynamic objects and static objects and the ranking of the system. The focus of this visualization (using cityscapes dataset) is making decisions on the use of color to maximize Situation Awareness rating technique (SART score), it does not depict the class distribution per object. On the other hand, we plan to visualize class distribution (pixel area or number of images) per object class in this project.

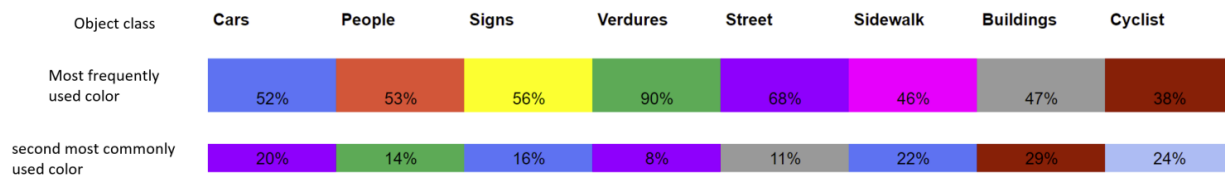


Figure 1: Color distribution of the object visualization [1].

References:

1. Colley, Mark, et al. "Effects of semantic segmentation visualization on trust, situation awareness, and cognitive load in highly automated vehicles." Proceedings of the 2021 CHI conference on human factors in computing systems. 2021.