**Mirror Detection**

**Survey 1:** [**Where Is My Mirror?**](https://arxiv.org/pdf/1908.09101.pdf)

**Main Idea of Work:**

The main idea of the work is to propose a new framework called MirrorNet, which helps in segmenting mirrors in images. The framework consists of 3 modules/steps in total:

1. Using a pre-trained neural network (ResNeXt101 network) that extracts multiple-scale feature maps from images.
2. Contextual Contrasted Feature Extraction (CCFE) connected to the pre-trained network, learns different scales of contrasted contextual features for localizing mirrors of various sizes.
3. Mirror map that coarsely highlights the dividing boundaries of the mirror and refines itself by helping the upper CCFE layers to focus on learning finer contextual contrasted features.

**Advantages:**

The main advantage of this proposed network is that this method is the first automatic method for mirror segmentation.

Till then, there was no proper dataset for mirror detection as well. Researchers of this paper have conducted extensive research and gathered a dataset with well-annotated images of mirrors. This is the only paper with its dataset for mirror detection/segmentation.

It is the best compared to the other state of the art algorithms for image segmentation.

**Disadvantages:**

One disadvantage I found is that the dataset consists of mostly internal mirror images. This, I feel, will not be that useful for production-level purposes in autonomous drones/cars. For example, if we take the mirrors in windows of tall buildings, they look entirely different from the normal internal mirrors. So, drones might get confused. Therefore, one way to improve this method is to have a more robust dataset, which also consists of images which cover all possible use cases of autonomous vehicles/robots.