**Visual Sharing with Color Vision Deficiencies in Images and Videos**. Xinghong, Hu. Phd Thesis in Computer Science and Engineering. The Chinese University of Hong Kong. Sep 2019

There are many people with color blindness or color weakness, we called Color Vision Deficiencies (CVD), around the world. Nowadays a highly division of labor requires us to cooperate with each other, including CVDs. However, because of the difficulty of recognizing an image accurately, CVDs may have many problems when they are working. How to solve the problem and make CDV’s life better is an attractive research area. Three methods are proposed in the field in history. The first is optical method. The second is recoloring method. The two methods are effective in certain aspect but they are both at the cost of hurting the visual experience of the normal-vision people. The last and the state-of-the-art method is stereoscopic display method which improve the disadvantage of two methods mentioned above. But it also has two flaws. One is unstable performance and expensive time consuming. Another is lack of temporal consistency for video application. In this thesis, Hu et al. propose a deep-learning based method and train up a high-quality neural network model to solve the problem mentioned in stereoscopic display method and the result validates the effectiveness of the new method.



