

Color Quantization Analysis Using Mascots of Public Institutions of Higher Education in the United States

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Colors play an important role in our lives and being able to recognize colors is extremely helpful in performing daily tasks. However, there are scenarios where people cannot easily identify colors, and automatic color recognition in such cases proves to be very beneficial. In this project, we use K-means clustering, a popular unsupervised machine learning algorithm, to initialize image quantization and perform color recognition. K-means clustering divides a colorful image into regions with pixels of similar hexadecimal color code values using the RGB (red, blue, green) color model and detects the colors based on identified clusters. Furthermore, we aggregate the colors in the images by their proportions and provide the color blend visualization. Our method is applied to investigate colors of selected mascots of public higher-educational institutions in the United States using the open-source software R. The usefulness of the project can contribute to research efforts to help visually impaired people to quantize and recognize colors.