Flagging graphics interchangeable formats (GIFs) on personal devices are essential to protect users with epilepsy or chronic migraine. The research broke GIFs into frames and compared consecutive frames in pairs with three conditions: the ratio of average intensity, percentage of dangerous pixels, and hertz value. First, the average intensity of each frame is calculated using the formula: 0.299 * red + 0.587 * green + 0.114 * blue (Sedgewick & Wayne, 2017), for each pixel in the frame. Next, to obtain the percentage of dangerous pixels, each pixel of the same location from the two frames is compared. The absolute value of the difference between intensities of the pixels is found. A value less than 128.0 (Sedgewick & Wayne, 2017) is incompatible. Then, the ratio of incompatible and different pixels is obtained, which is multiplied by the ratio of different and total pixels. Finally, if the hertz value, inverse of the duration of each frame divided by 1000, falls within 3 to 30 (Wirrell & Hernandez), the GIF can be potentially dangerous. Thus, three threat levels, risky, dangerous, and extreme, have been established if one, two, or three conditions are met, respectively. After taking these results, viewers can be notified so that they can be protected from potential graphic-based attacks.

Keywords: epilepsy; chronic migraine; graphics interchangeable format;

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