MAT 594X
Computational Systems for
Visual Art and Design

Final Project Proposal

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Project Title: A computational tool for recoloring images based on user emotions

While working on the previous course assignment, I found the color picker assignment interesting. As shown in *Concerning the Spiritual in Art* [1], Kandinsky believed that looking at colors can result in a psychic effect and different colors can convey certain emotions. Inspired by this report, I would like to create a new computational tool that will automatically recolor images based on user-defined palettes. Figure 1 is an example of image recoloring from Zhang et. al's paper [2]. First, the user will define palettes by choosing which colors correspond to their mood: joy, sadness, anguer, or surprise. The user will use one of the defined palettes to draw on the interface. After finishing drawing, the user will show a series of emotions while looking at the camera. The user interface will evaluate the emotional state of the user using facial emotion detection and display the image recolored with the palette corresponding to one's emotion.

Figure 1: An example of image recoloring.

References

[1] Kandinsky, Wassily. *Concerning the spiritual in art*. Courier Corporation, 2012.
[2] Zhang, Qing, et al. "Palette-based image recoloring using color decomposition optimization." *IEEE Transactions on Image Processing* 26.4 (2017): 1952-1964.