

Adding Emotions to Pictures

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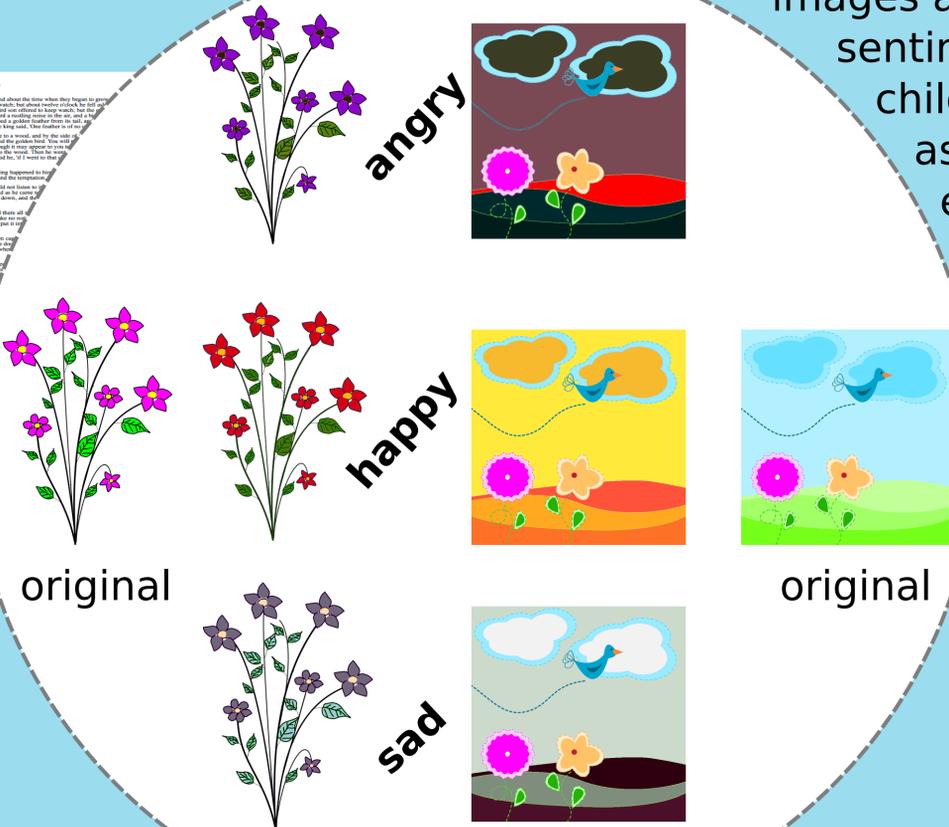
UNIVERSITY OF TWENTE.

1. Introduction

Many out-of-copyright classic works of children literature are available as e-books:

- * Project Gutenberg
- * Google Books
- * Internet Archive

However, they are **not particularly appealing** for children to read.



2. Idea

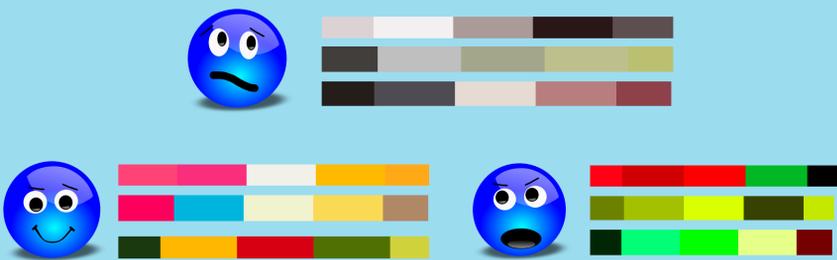
Automatically illustrating those texts with images makes them more entertaining to read.

Existing work on text2image focuses on factoid sentences [1], while children texts often contain emotional paragraphs.

Proposal: Postprocess selected images according to the found sentiment [2]. Since children are able to associate colors with emotions [3], we can alter the image's color scheme acc. to the sentiment.

3. Colors

Fifty color schemes were extracted for each sentiment (sad, happy, angry) from Kuler: each scheme consists of 4-5 colors; with tags provided by users.



<http://kuler.adobe.com/>

4. Approach

Input: text

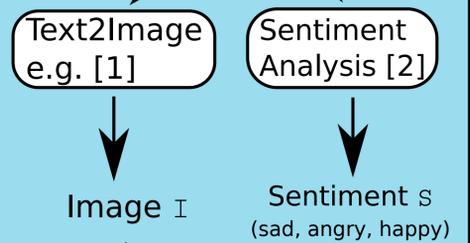


Image I Sentiment s
(sad, angry, happy)

Color Scheme Adaptor

- Given (I, s) , determine the most suitable color scheme by calculating for all color schemes (CS) of s , their color similarity to I :
- 1) For a CS with c colors, determine the c most dominant colors in I : each color in CS is matched to the most similar color in I .
 - 2) Calculate the distance between the color pairs and select the CS with the smallest distance.
 - 3) Replace the c most dominant colors in I with the colors of the selected CS.

Output: picture to illustrate the text, conveying the identified emotion through color.

5. Future Work

User study with children

- (i) Do children recognize the different emotions conveyed?
- (ii) Are children interested in such pictures?

Combination of color schemes

Currently each color scheme has a maximum of five colors.

References

- [1] D. Joshi, J. Wang, and J. Li. The Story Picturing Engine - a system for automatic text illustration. TOMCCAP, 2(1):68-89, 2006.
- [2] C. Alm, D. Roth, and R. Sproat. Emotions from text: machine learning for text-based emotion prediction. PHLT '05/EMNLP, pp. 579-586, 2005.
- [3] C. Boyatzis and R. Varghese. Children's emotional associations with colors. The Journal of Genetic Psychology, 155(1):77-85, 1994.