

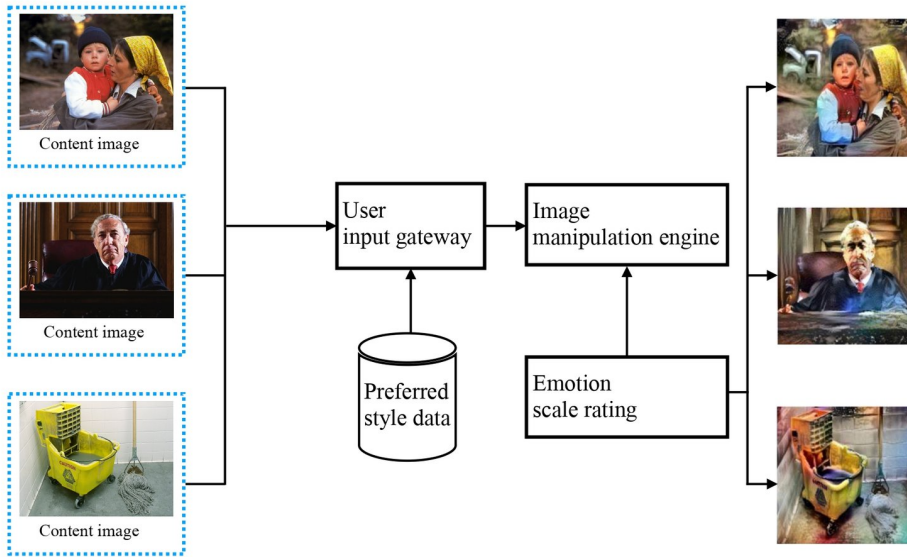
Customizable Emotion Modification for Images and Video

 Communications & Information


 Health & Wellness

 Manufacturing

Computer/AI/Data Processing and Information Technology



IP Status
Patent granted



Technology Readiness Level (TRL) ?

5

Inventor(s)

Prof. CHAN Ho Man

Miss LIU Qi

Mr. PALMERSTON Jeremiah Bradley

Mr. SHE Qi

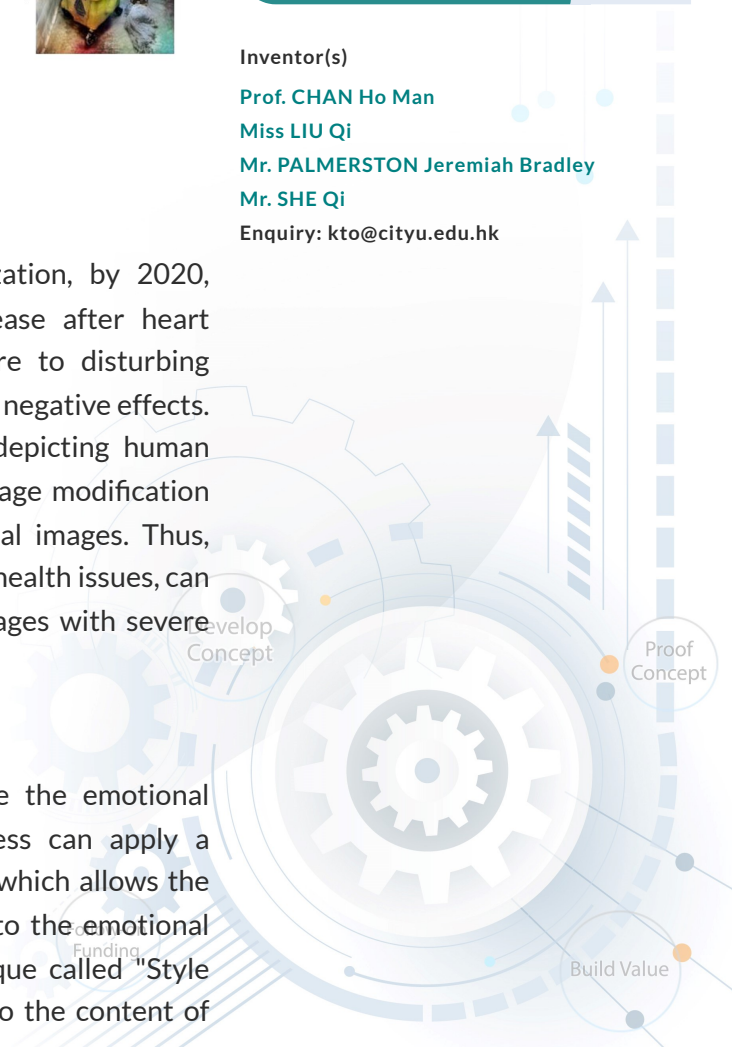
Enquiry: kto@cityu.edu.hk

Opportunity

According to statistics from the World Health Organization, by 2020, depression will become the second most common disease after heart disease. Mental health can be harmed through exposure to disturbing images, and people with depression are susceptible to these negative effects. For publications which need to post disturbing images depicting human suffering, or natural disasters along with the news, our image modification system can be used to neutralized the negative emotional images. Thus, people who suffer from depression or are at risk for mental health issues, can utilize our system to protect themselves from viewing images with severe negative emotional content.

Technology

We have developed a customizable system to modulate the emotional content of images and videos. This exciting new process can apply a specialized modification to pictures or videos of any type, which allows the creator to adjust the visual emotional style to be similar to the emotional style of the chosen images. Our system utilizes a technique called "Style Transfer" wherein the style of one image can be applied to the content of another.



The system we have developed goes far beyond single images. By creating a system that can utilize many input images, we have opened significantly more possibilities. This system can now be used to extract features that are much harder to define. Initially, a prototype has been developed that can extract the emotional content of a collection of images. Using a large dataset of images that are rated on an emotional scale, the system is able to extract the common image features among emotionally pleasant images. This allows for a "positive emotion" filter to be applied to any image. Such a system has wide-ranging applications. Content creators could apply emotional filters to convey their message as potently as possible, collection curators could add modifications that display the overall message most effectively, or individual users could filter their content so that it is not emotionally disturbing. Likewise, any abstract concept can also be extracted from a labeled dataset. Imagine a "cuteness" filter, a "scary" filter, or an "excitement" modifier.

Advantages

- Flexible for any number of style images and any number of target images
- Can utilize multiple datasets to empirically extract emotion information
- Not limited to a particular model, or even emotion features at all, and can learn individual preferences
- Can extract image features of any category that can be applied to any image or video content
- Images can be both labeled and modified within the system itself

Applications

- Visual Application
- A tool for content creators
- As a protective device for parents to filter content for their children
- Mental health protection
- Advertising

