Project Title

Colour Scheme (CS)

Supervisor

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Development Environment

Operating Platform: Microsoft Windows XP

Hardware Requirement: Intel PC installed with Apache web server

Database Server: MySQL 5.0.51b

Programming Language: C++, C#, PHP, SQL, JavaScript, HTML, CSS

Development Tools: Microsoft Visual C++, Microsoft Visual C#, Adobe Dreamweaver 8, Adobe Photoshop CS2, AppServ 2.2.8 (Apache 2.2.8, PHP 5.2.6 & MySQL 5.0.51b)

Project Description

Background:
Existing commercial software can perform image colourization, however the task is nonetheless time-consuming – the user must carefully choose the "correct and suitable" colours to brush over the image regions. Thus, techniques that help to expedite this procedure are of great interest in recent years.

To address this issue, Levin et al. proposed a semi-automatic image colourization approach in 2004. This approach only requires users to specify quickly some sample of colours# as guidelines. Colourization then can automatically and seamlessly fill in colours to the monochromatic image in which the coloured image is virtually desirable to the unaided eye. Levin et al. borrows the term "colourization" from Wilson Markle who invented the process of adding colours to a black and white movie or TV program.

Our system, Colour Scheme (CS), aims to incorporate Levin et al.'s approach to address the colourization problem by providing a simple, yet efficient way to support the colourization in an easy to use manner.

Main Target:
The main target of this project is to provide an efficient and fast post-production tool for amateur users to reduce the amount of time and effort needed to colourize an image.

Major Functions:
1. Reference image retrieval
Users generally have no idea about the original colours of input grayscale image and this might cause problems providing useful colour cues for a subsequent colorization process. To remedy this problem, a sequence of existing images will therefore be retrieved from the image database based on texture similarity, so as to provide users suggestions on how to do the colour markup.
2. Grayscale image colourization
Our system provides an automatic colour propagation functionality to fill in colours to original grayscale image according to what the users given during the colour markup process.
3. Re-colourization of existing images
Our system supports re-colourization of existing colour images. This allows users to appreciate their images in other colour schemes / styles.

Project Highlights

This colour specification process also refers to colour markup.