Title: Magic Canvas

Theme: Visual Computing
Project period: September-December 2012

Project group: MTA 12338
Participants:

Gustav Dahl

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Johannes Møjen

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Maximilian Müller

_____   _____

Marco Winther

_____   _____

Marta Botella

_____   _____

Simon Jakobsen

_____   _____

Supervisors:
Thomas B. Moeslund
Andreas Møgelmose

Abstract:

The theme for this project is Visual Computing, with a focus on image processing. The group has been in collaboration with Hjørring Library to develop an installation named Magic Canvas. Hjørring Library aims to distinguish itself by providing a wide range of interactive experiences, using various themes. In the time period for this project the theme is Christmas. The goals are to make an entertaining installation that can be enjoyed by people of all ages, and it should be some type of software that is easy for the library staff to maintain. The Magic Canvas utilizes an infrared webcam to capture video of people casually passing by, displaying them on a big canvas as a Christmas-related character. To make the camera get a clear contrast, infrared LED strips are put near the canvas. The software is written in C++, using the OpenCV library, as well as the Unity game engine to display graphics on the canvas. To detect people with the camera, various image processing techniques have been used, such as thresholding, background subtraction, region of interest and BLOB analysis. The program is working without any physical devices, and it does not require any external maintenance. The group aimed to make the program ready for the beginning of December. This was achieved, and the program has been running in Hjørring Library throughout December 2012.

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