Insect Project: Simulation of the Crowd Behaviour of Insect / Chinese Calligraphy (Single / Dual Screen)

Overview

Background
The idea of insect project is come from the current news in Hong Kong in 2005. There is a news reported about worms (red blood worms) was discovered in the public swimming pool. In the first beginning, the Hong Kong Government denied that it is their problem. They suspected that there might be some people bought the worms into the swimming pool.

The first week after, a numerous public swimming pools were reported finding worms. And the Government decided to close the swimming pool and the life guard start to clean up the water. Eventually, the more they clean, the more worms had been discovered.

I personally like swimming a lot and found this news is so amazing. Let’s imagine, when we are swimming, u see thousand of different kind of worm are chasing u inside the seaworld. And, the faster u swim, the more they are coming out. In order to stop there, u need to stay alone, not even move a bit. The more you are not moving, the more they will be leaving. It is completely and our normal physical experience. Normally, we try to swim faster to remove the worms. (I/ncest immediately from our body).

Technical Solution

Insect project simulates the crowd behavior of small flying insects. Two different flying behaviors are simulated. Behavior one is random flying without a specific target. Inverse motion is used to generate this behavior. Behavior two is strict flying with a specific target. In this project, targets can either be the foreground objects or the moving objects identified using the video frames captured from a web-cam or a video capture card. The foreground objects identification is calculated by the difference in color and luminance of the incoming video frames and the pre-recorded background image. The interactive performance. The moving objects are identified using the video frames captured from a web-cam or a video capture card. The foreground objects identification is calculated by the difference in color and luminance of the incoming video frames and the pre-recorded background image.

Custom-made Control Panel

We could control the visual effect by changing the parameter in the section of control panel. It aims for further application and integration continuity. And it is written and implemented by xml. In the control panel, we can configure the size of insects, level of detection, chasing speed, number of insects, etc. We could control the visual effect by the control panel based on our needs.

Methodology

What is Insect Project?
There will be thousand of insects virtually cashing our human bodies, which aims to provoke our awareness of the understand about the relationship between our physical reaction to speed with virtual speed during the exhibition. The key point is that the body is virtually cover by different flying insects.

The most innovative is those flying objects would be able to chase the moving bodies by the motion detection system. The custom-made computer capturing system is also allowing for further application and integration continuity and flexibility.

Version

A. Single Screen Oriented
In this version, flying objects(insect) are chasing with a specific target by detecting the difference in color and luminance of the incoming video frames and the pre-recorded background image.

B. Dual Screen Oriented
In this version, targets can either be the foreground objects or the moving objects identified using the video frames captured from a web-cam or a video capture card. The foreground objects identification is calculated by the difference in color and luminance of the incoming video frames and the pre-recorded background image.

C. Line Oriented
The red lines mimics the laser pointer device. These lines give the insects hints where they should go. With the lines, the audience can tell their flying objects and the position of the insects to trace. Since calligraphy track on different regions as their target, calligraphies can be evenly distributed on the targets.

D. Chinese Calligraphy + Dual Screen Oriented
In the work, you can see two of yourself at the same time; on the left is you, and the further you walk away, the calligraphies follow you even faster, yet at the same time, the you on the right, the further you walk away, the calligraphies are unable to follow you.

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