Saturday, April 20, 2013

tips on IR tracking, from mark coniglio

Mark used EyesWeb software (PC only) in 2006 for his performance 16 REVOLUTIONS which gave him a reasonable skeleton map of the dancer. But first he set up the stage for Infra Red camera tracking, as described below.

Using theatre lights focused on the back wall, with lighting gel filters added to each light: Roscolux 19 (x2)) Roscolux 83 (x1) Roscolux 90 (x1)

These four gels will cut out the visbile light spectrum but allow the IR light to still shine from the theatre lights.
NB DO NOT USE THE LIGHTS AT GREATHER THAN 50% or you will fry the gels. Always check the gels often for heat damage and repalce as needed.

Then use an IR B&W security camera (or a sony nightshot camera - Sony owned the IR nightshot patent so the camera HAS to be a cheap Sony SD camera for this to work or a good quality B&W security camera).
Add a Lee 73 (IR) filter to the camera. Then the camera will only receive the IR light (ie will only 'see') what is lit with the IR light. If a dancer stands in front of the IR lit wall the front of their body is not lit with any IR light and so they appear as a perfect silhouette.

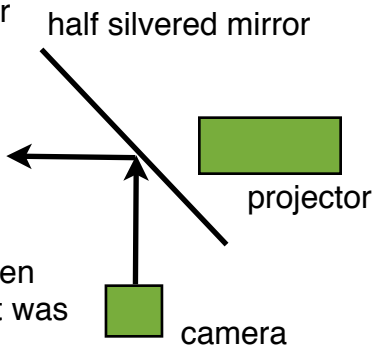
Then Mark used EYESWEB with that image to extract the skeleton data for his video mapping and effects in Isadora.

One good advantage is that you can watch a much bigger area than you can with the kinect. You dont have any depth mapping info, but you get a similar result.

Video projectors do not emit IR light, so they dont mess with the tracking. You can project onto the IR lit wall and it deosnt affect the tracking results.

IR leds can be worn on the dancer instead if you want to just track that way instead, and then you don't need to wash the back wall with IR light. You now just track the moving IR leds. Perhaps this could be a good way to map onto a moving screen?

Klaus Obermeier also did a good example fo this with a rear projection screen, IR lights washing the screen, plus front projection mapping onto dancers. However he added the use of a half-silvered mirror so that his front positioned camera could seem to have the exact same position as if it were inside the projector lens, and therefore avoiding any issues of parallax. He was able to perfectly map front projections onto the bodies of the moving dancers only. When used with contrasting imagery on the rear screen, the effect was spectacular (both coneptually and technically).



thanks Mark!

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