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The Fly's Eye: Interactive Installation using Video Tracking and Analysis

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Abstract: The interactive artwork, *The Fly's Eye* (2002), draws its inspiration from the structure, function and significance of the eye of the fly and other processes of vision. In *The Fly's Eye*, the history of a gallery space or film is built in layers of position and image.

Keywords: installation, interactive, video processing, video analysis, visual perception, film

1 Introduction

Much of the human brain is devoted to processing visual information, and researchers believe more than half of a fly's brain is devoted to visual processing. A visual system such as the fly's, the simplest living eye, helps researchers to understand the properties of cells, the interpretation of visual information, and the representation and processing of information. Visual systems can also inspire interactive art works, as was the case with *The Fly's Eye.*

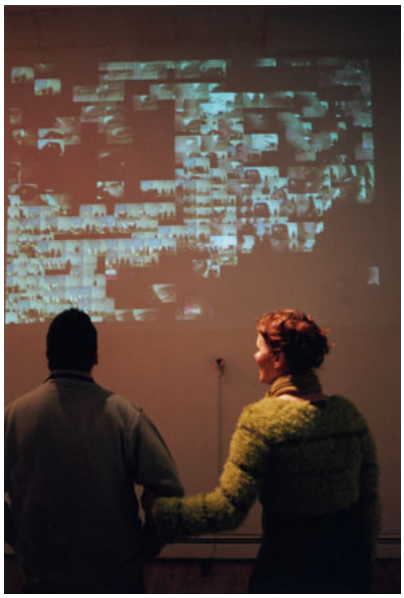

Figure 1: Installation view, Apex Art Gallery in Tribeca, New York, NY

In *The Fly's Eye* installation, multiple images are projected in the gallery space based on the movement of viewers in the space. *The Fly's Eye* 'watches' the viewer in the space while the viewer simultaneously enjoys some control and direction of the location of the image. Each time the viewer changes position, the live video feed moves and a visible trail is left in the gallery space.

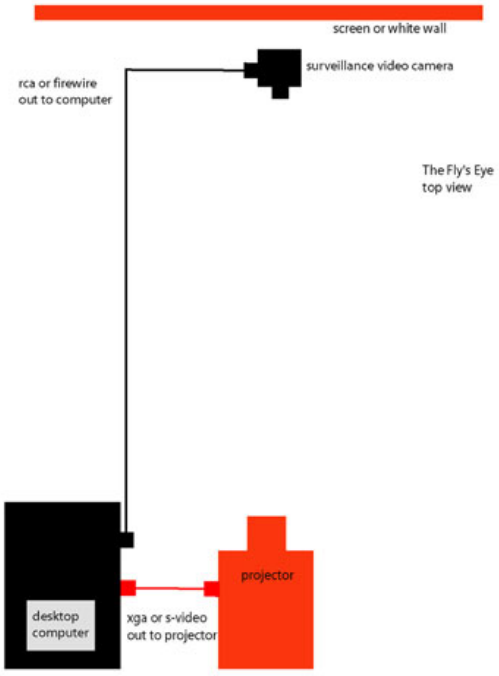

Figure 2: Basic technical configuration of the installation

2 Technical Description

The Fly's Eye consists of a computer system designed to perform a real-time spatial analysis and deconstruction of a live or pre-recorded video using a custom designed interface. Each video frame is tracked and analyzed according to the location of light, color, or motion in the frame. A copy of each video frame is placed in a grid according to the results of the analysis, and a live animation is created.

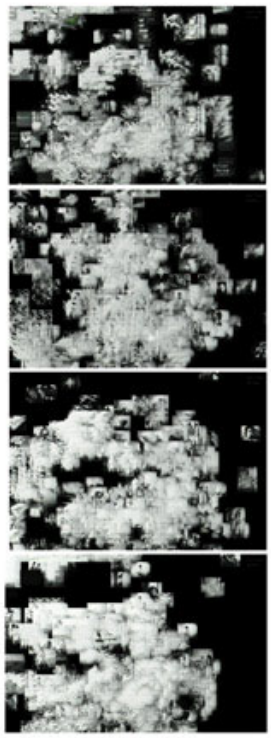

Figure 3: Lighting analysis of Bunuel's *Un Chien Andalou*

Figure 4: Detail of Figure 3

3 Large Format Digital Prints

The Fly's Eye system also can be used to analyze the lighting and color of films. A series of prints showing patterns created when films are viewed through *The Fly's Eye* have included: a lighting analysis of Fellini's *8 1/2* in which the print is divided into a grid of 28 squares, each documenting a ten minute section of the film layered over the previous ten minutes; an analysis of the location of the color red in five minute sections of the film *Moulin Rouge*; and a lighting analysis of Bunuel's *Un Chien Andalou* (see figs 3 and 4) in which the print is divided into three rectangles each documenting a 5-10 minute section of the film. Prints vary in size but are approximately 60" X42"