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

Andrea Polli
Hunter College Film and Media, 695 Park Ave., New York NY, USA
apolli@hunter.cuny.edu


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*.

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.
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

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”

Figure 4: Detail of Figure 3