

**CMSI 402 SENIOR PROJECT LAB**  
Project Status Report #6

**Name:** Mark S. Kolich  
**Date:** Tuesday, March 08, 2005  
**Project:** Silhouette (Real-time Shape/Color Recognition)  
**Period:** March 1, 2005 through March 8, 2005  
**Project Goals:** Silhouette will implement a known shape detection algorithm and package it into a powerful and easy to use open-source application written in Java. The application will be developed to highlight the performance of the algorithm using a live JPG stream from an Axis network-camera.

**Accomplishments**

- Fine-tuned, and tweaked my implementation of the Sobel edge detection algorithm. Tried to optimize for speed.
- Researched several means of applying shape detection to the edge detected camera-stream. Concluded that shape morphing will be the best way to solve my problem. Other possible methods include using a basic form of gesture recognition, or image segmentation. Interestingly enough, my problem is incredibly similar to that of recognizing hand-drawn graffiti characters on a Palm Pilot.
- Fine tuned my circle recognition system to better recognize circles while limiting system overhead, hence, improving detection speed.

**Plans**

- Chose a shape recognition algorithm in the next few days, and begin detailed implementation of those algorithms.
- Investigate how Palm Graffiti recognizes hand-drawn characters and other shapes.

**Risks**

- I've concluded that shape recognition is definitely one of the most difficult aspects of machine vision. This may limit the scope of my project to only recognize specific shapes: circles, and squares.