CMSI 402 Senior Project Lab
Project Status Report #5

Name:	Mark S. Kolich
Date:	Tuesday, March 01, 2005
Project:	Silhouette (Real-time Shape/Color Recognition)
Period:	February 22, 2005 through March 1, 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

- Researched on line and found an easy to understand Sobel Edge Detection algorithm. **Based on the algorithm described on the web-page, I successfully implemented my own version of it.**
- Studied multiple convolution image kernels used in the Sobel Edge Detection algorithm. Convolution is a simple mathematical operation which is fundamental to many common image processing operators. Convolution provides a way of 'multiplying together' two arrays of numbers, generally of different sizes, but of the same dimensionality, to produce a third array of numbers of the same dimensionality.
- Fine-tuned application GUI and eliminated “dead code.”
- **Began experimenting with Hough's circle-detection algorithm, and made great progress with integrating it into my application.**

Plans

- Continue to work on edge detection and refine Sobel algorithm.
- Review other algorithms and understand their basic principles. **Begin creating a detailed plan of my own shape recognition algorithm.**

Risks

- It has become extremely apparent that image processing applications require a

significant amount of CPU power. Unfortunately, applying intense image processing algorithms to a “real-time” video feed is unrealistic because of the hardware requirements. Therefore, I may scope my project to only include the most critical components of shape recognition, using a basic edge detection algorithm.