

Abstract

This project involved designing motion detection software. LabVIEW's NI Vision and Motion software was used to implement the detection. A Firewire camera was used to feed the video to the computer. The software developed has the capabilities of not only reading live camera feed but can also read any AVI file. The software has the ability to detect motion, place a red circle on the center of the region of detected motion, and saves the motion file to a hard drive. The camera operates at 60 fps, and while no motion is detected, the software processes 45 fps. When motion is detected, the software slows, only writing roughly 30 frames per second. The software includes a GUI which shows the live feed, and displays where the files will be saved. The detection is also customizable, allowing the user to select the threshold values for when motion is detected, depending on the specific need of the user.

Results

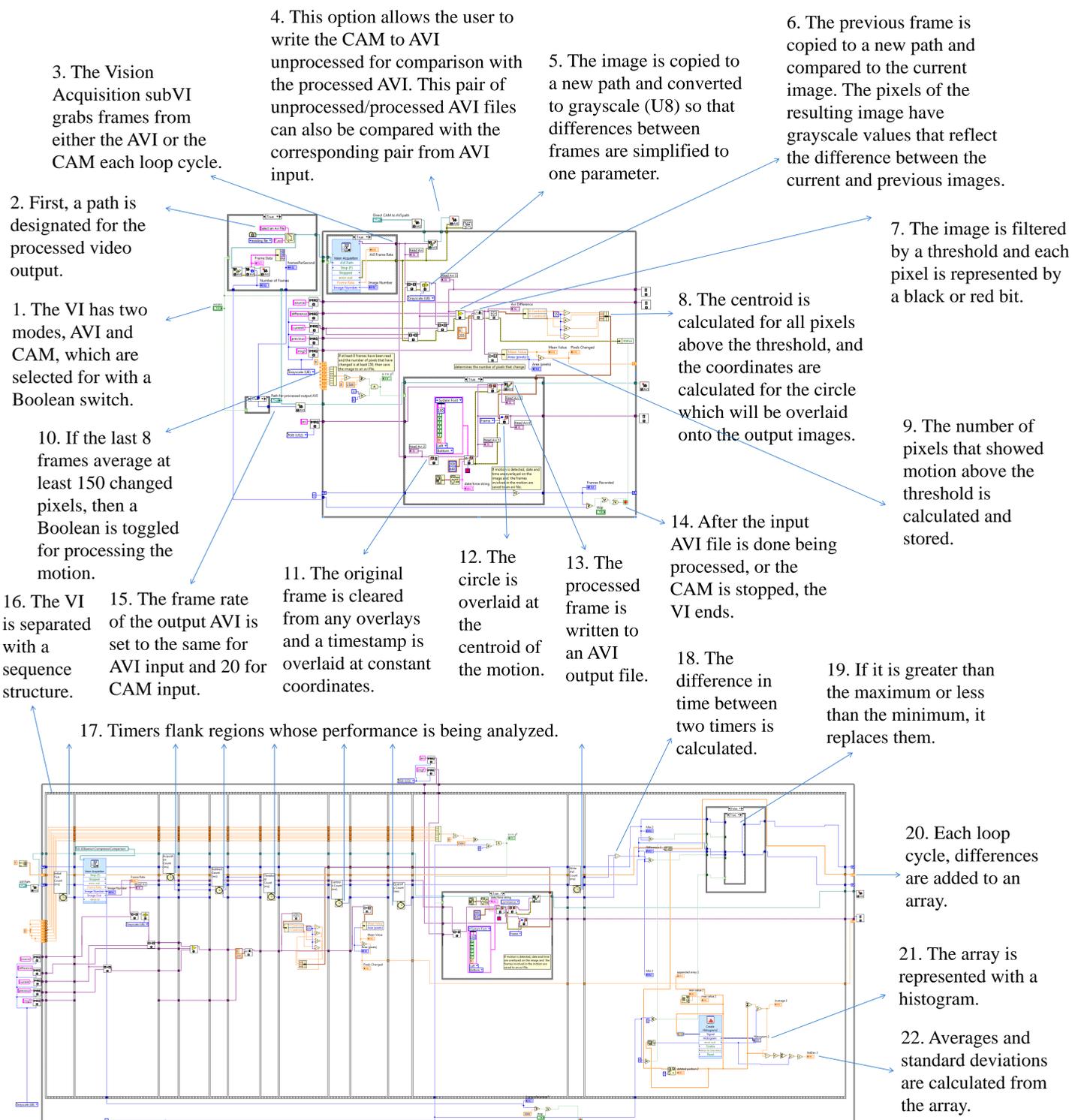
This table shows a summary of average times for each part of the analysis.

Components	AVI		CAM		AVI		CAM	
	Motion	No Motion						
	Avg (ms)	Std Dev						
Acquisition	-	-	33.6	8.57	-	-	19.7	1.26
Subtract	-	-	0.437	0.497	-	-	0.506	0.4999
Threshold	-	-	0.317	0.464	-	-	0.144	0.351
Centroid	-	-	0.566	0.496	-	-	0.485	0.499
Quantify	-	-	2.02	0.149	-	-	2	0.162
Write AVI	8.34	1.93	0	0	9.12	2.1	0	0.0258
Sum	45.28		36.94		31.955		22.835	

Acknowledgements

We thank Dr. Robert Morley, Ed Richter, Kristen Heck, National Instruments, the Department of Electrical and Systems Engineering, and Washington University in St. Louis

Methods



Histograms

