

SE 491 WEEKLY REPORT 3

Date: 2/20/2017

Group Number:

Dec1704

Project Title:

Danfoss Visual Inspection System

Client &/ Advisor:

Radoslaw Kornicki and Professor Dogandzic

Team Members &/ Roles:

Joey Elliott – Communications

Evan Woodring – Team Lead

Nick Gerleman – Key Concepts

Cory Itzen - Webmaster

Weekly Summary

This week we continued working researching / learning about the libraries we are going to be using. A major hurdle we've been encountering is confusing libraries / SDKs. Basically, when we find something that we can use to cut down on development time, we end up having spend hours figuring out why our code doesn't work. The failed code is usually a result of out of date tutorials, guides, and samples. However, we are slowly overcoming this issue. We further developed the test bench for error detection. Since we all have our own modules, development has been steady (we don't rely on each other's code). We've noticed that we haven't been writing many lines of code, but each line of code pulls a lot of weight.

Past Week Accomplishments

Name	Accomplishments
Joey Elliott	A lot of this past week was spent on a limiting factor: C++. I encountered a problem with the sample code for the SDK being out of date, in that the code provided was out of date, even though it was the most up-to-date package that I based my work on. Furthermore, I encountered more errors with configuration files for the sample project not allowing the RealSense to be pick up by the PXCSensorManager (the class that locates and provides access to the

	cameras). After battling all of these problems, I was eventually able to create a program to scan an object for 10 seconds.
Evan Woodring	Continued communication with Radek in regards to setting up a testing environment in the Danfoss facility. Also coordinated picking up the new camera for testing. Researched and tested 4 separate programs for viewing JT files. Eventually succeeded in using Autodesk to convert JT files to OBJ files. The main problem here was that the JT files from Danfoss were extremely large, which may pose problems in the future.
Nick Gerleman	Continued work on the test bench. Completed the mesh processing portion of the test bench.
Cory Itzen	Continued research on the Point Cloud Library and ways it can be used for the project. Resolved some issues with the PCL running in Visual studio.

Pending Issues

Name	If Applicable
Joey Elliott	n/a
Evan Woodring	n/a
Nick Gerleman	n/a
Cory Itzen	n/a

Individual Contributions

NAME	INDIVIDUAL CONTRIBUTIONS	HOURS THIS WEEK	HOURS CUMULATIVE
Joey Elliott	Created proof of scanning with the RealSense camera from custom written code.	8	22
Evan Woodring	Got Autodesk working for converting Danfoss' JT files to OBJ files.	5	17
Nick Gerleman	Assisted other team members in troubleshooting issues with a library we are using. Brought the team one step closer to actually being able to detect errors.	5.5	28.5
Cory Itzen	Not much this week, work mainly focused on research.	4	17

Comments and Extended Discussion

n/a

Plan for Coming Week

Name	Accomplishments
Joey Elliott	Generate an OBJ file from custom written code.
Evan Woodring	Consult with Radek about what the existing code they have does (in regards to working with JT files). If that's not feasible, then try and work with open cascade library to convert JT files to OBJ files.

Nick Gerleman	Plan to work on the mutator graph portion of the test bench and ideally start working on the front-end of it.
Cory Itzen	Resolve all issues in PCL and apply the research done with the PCL to the project.

Summary of Weekly Advisor Meeting

In this week's meeting, we elaborated on what we've all been working on. We gave a live demo of the RealSense camera to show off some of its limitations. We further discussed some problems that we may have, and how these problems should be approached with the new camera we are getting. We also covered some mathematical formulas for comparing the point clouds. In this discussion, we also encountered a problem with the automatic smoothing done to our generated point clouds. We further discussed what we plan on covering next week. In the coming week, we will be getting the new camera from Radek (an Occipital camera).