

EE/CprE/SE 491 WEEKLY REPORT 7

Date Span:

April 6th - April 12th

Team:

sddec19 - 17

Project:

Goose Chaperone

Client/Advisor:

Dr. Randall Geiger

Team Members:

Johnson Phan

Weston Berg

Alec Morris

Woodrow Scott

Zhihao Cao

Summary

There are various choices on the robot's material that we have deliberated over for a while. Some newer suggestions were to buy a fully functioning platform to avoid having to make one from scratch. An example of a platform that was suggested is one of the small electric kids cars. We would then hack the platform and add our sensors. This idea eventually got tossed out because such a platform would be fairly expensive and if we were to break something that was not able to be replaced all the money would be wasted.

Instead we are going to stick to building our own. The final decision on the material was PVC. We will use PVC in the form of pipes and possibly sheets to construct the skeleton of the robot.



The piping is nice because it is easily configurable with various types of connectors like the ones displayed above to make different shapes. The sheeting will most likely be used to contain the main electrical components such as the microcontroller and the battery pack.

Two, geared DC motors with a reduction ratio of around 100:1 - 150:1 will be used for propulsion of the robot. This will provide plenty of torque for the robot to move over rough terrain. The motors will attach to plastic or rubber wheels with a diameter of 6"-7" that will provide plenty of traction. The two balancing sleds will be a teflon-like material with low friction to easily glide across surfaces without creating lots of drag.

Accomplishments

Johnson Phan: Find several materials for construction design.

Weston Berg: Continued deliberation on robot materials and motor/wheel combinations

Alec Morris: Confirmed GPS module, looked into structural components of chassis.

Woodrow Scott: Continued research into tensorflow, as well as structural components for the device.

Zhihao Cao: Choose material for robot body part and we decide to use PVC as material to construct our robot.

Time Contributions

Team Member	Hours Contributed	Cumulative Hours Spent
Johnson Phan	2	23.08
Weston Berg	3	30
Alec Morris	2	23
Woodrow Scott	3	27
Zhihao Cao	2	23

Client Meeting

The potential material selections were analyzed in the meeting with Dr Geiger. It was confirmed to primarily use PVC and possibly some aluminum for creation of the autonomous robot. Using various tutorials as references, we will begin creating possible construction designs for our machine.

Future State

- Johnson Phan: Begin creating designs for construction using PVC pipes. Temporarily stop
Iteration coding plans.
- Weston Berg: Create rough design, in the form of some sort of CAD drawing, of the robot's structure
- Alec Morris: Help out with designing robot body. Begin ordering components.
- Woodrow Scott: More tensor flow tests, I intend to work on a virtual environment for faster testing, and to start working on image classification.
- Zhihao Cao: Design our robot body by using PVC as material and need to consider how to connect each components to the PVC.