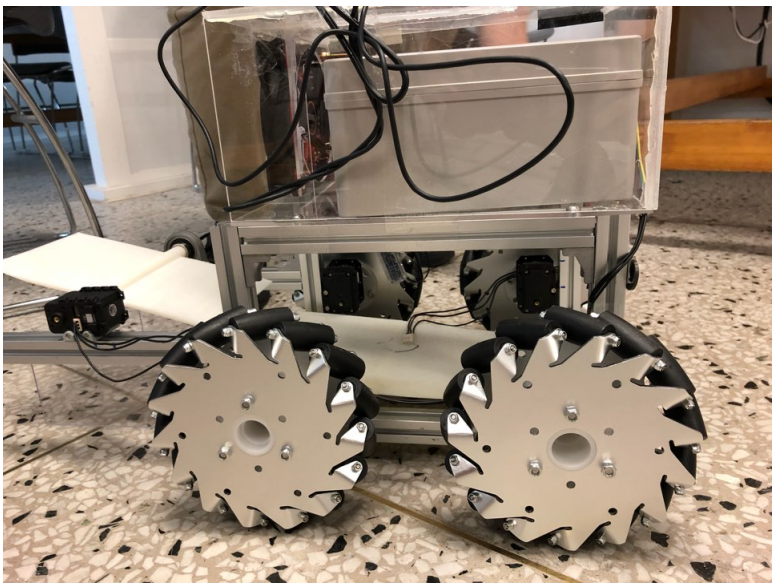
| ME400 Capstone Design I<br><br>Progress Report – Group 9 | Student Number | 20140883 |
|---|---|---|
| | Name | 정우석 |
| | Part | Solidworks |

After the second presentation, our group came together to discuss what goals we wanted to achieve as a team. Many of us wanted to make the vehicle faster, making us order the big wheels.



The robot was clearly faster, however, we came across many problems in the following weeks.

Firstly, we had to manufacture a lot of joints using 3D printing and materials processing. This took about a week.

When the Solidworks team finished manufacturing the robot and handed it over to the software team, they found a problem of the wheels slipping. Solidworks team soon realized that the problem had to do with bending of the shaft, which was inevitable.

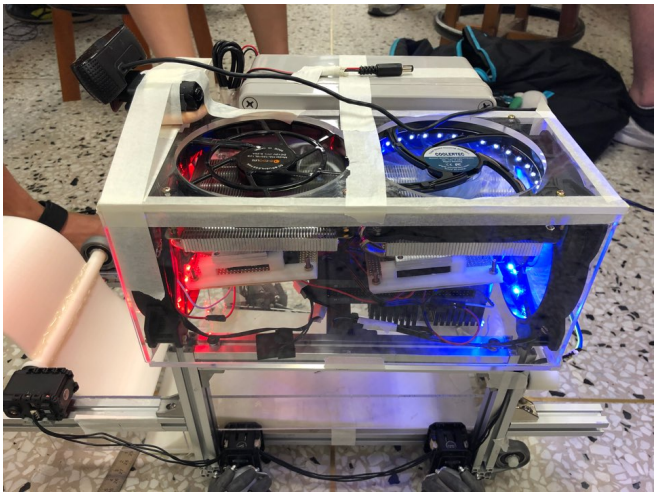
Solidworks team came together and designed components that could fixate the wheels, however, our effort was futile.

Eventually, 3 days before the presentation, we came together as a group and decided to use the small wheels again. This was due to several reasons being:

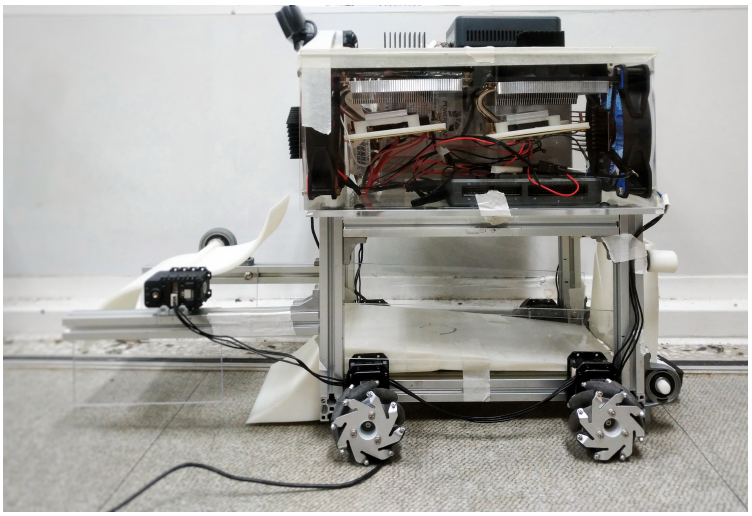
1. There was an announcement due to the complaints from other group that using big wheels may not be fair. The grading criteria would now consider the use of big wheels such that the reduced time would be credited less.
2. The wheels kept on slipping, which disrupted our path planning.

The small wheels worked very well with perfect ball capture but with slow speed. However, at this point we knew that our group had to focus on accuracy rather than speed.

One thing that our group was unique in, was the heat management system. We developed a cooling duct, which allows efficient cooling.



This was our final product, which took a lot of tuning and redesign.



Capstone was a very demanding course, but at the same time **very** rewarding. As Solidworks team, I was able to learn about materials processing and drawing sketches in Solidworks. However, looking back it seems like I learnt more about teamwork, communication and presentation.