

# Robotic Cart

By Audrey Luan

# The Problem

In many places across this country, it is difficult to ship stuff over to individual homes and buildings in mountainous areas and in crowded cities.

- Cars and semi trucks cannot move large items to off-road residential areas.
- This would ensure that those who live in these locations can easily transport vital supplies without putting significant strain on their bodies.



# The Problem - Real World Examples



California - San Francisco

1. Limited parking spaces, frequent traffic.
2. Carrying heavy items by foot is very dangerous in many streets.



California - Mendota, Fresno County.

1. Rural area, off-road.
2. Farming requires a lot of resources to be used.

# Why It Matters



There is a large gap that large vehicles such as cars and semi trucks can't provide on the UCSC campus for moving heavy loads.

I propose a robot cart project to solve the problem, in order to make moving across walking paths easier for on-campus UCSC students. This will reduce the strain of students, workers and their family members throughout the school year.



# Why It Matters - Accessibility

At UCSC, many places are still inaccessible for those who are physically disabled since our campus is mountainous.

It will allow them to bring the items they need when they move in or move out of on-campus residences, and when they need to go anywhere on-campus.

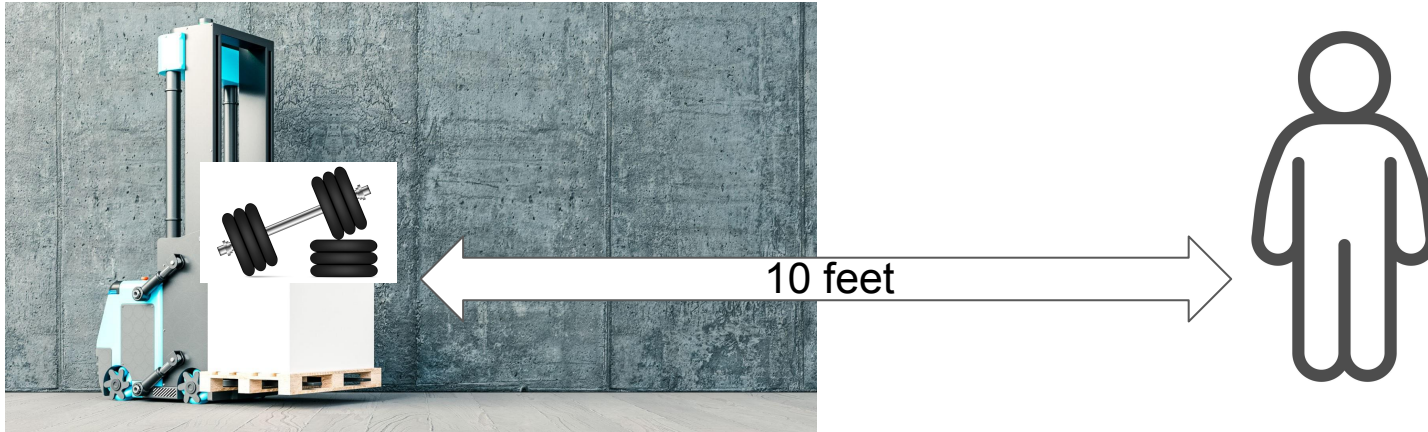


# Stakeholders and Feedback

- Primary stakeholders: Farmers Markets, HARE Lab/jlab.
- Secondary stakeholders: University clubs.
- Other stakeholders: UCSC students.

# Goals and Success Criteria

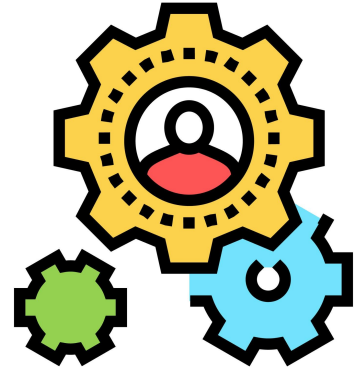
- Successful performance on carrying 25 pounds of items across 100 feet without the power board burning out.
- Chassis of robot cart is stable enough to stay in place at an incline of 25 degrees.
- The robot cart can follow anyone with a beacon within 10 feet.



# Resources and Constraints

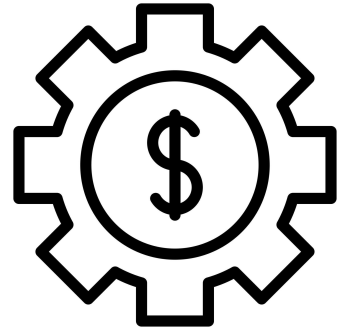
## Resources:

- Baskin Engineering 3D printers
- BELS
- Amazon



## Constraints:

- Maximum weight tested is 50 pounds, for scope of CAPSTONE project
- Cost of 3D printing filament
- Electrical engineering supplies provided by BELS



# How can this be better

Give out any suggestions on how this project idea can be improved upon!

