Team Deliveriod

By: Michael, Forzando, Williams Advisor: Dr.Kim

Be ready to be amazed



Problem Statement:

We wanted to create an autonomous robot that can transfers documents from one space to another. -Lets talk about why we need Mr. Autonomous

-Our goal 2021-2022 goal.

We wanted our robot to do 3 things

- → Be autonomous
- → Follow some black tape
- \rightarrow Be a cool design

Some Constraints:

- \rightarrow Our Deadline 4/15/22
- \rightarrow Our budget was \$200
- → We funded this project ourselves
- → We all had limited knowledge of robotics.
- \rightarrow Finding affordable parts
- \rightarrow We wanted a cool design



Standards & Regulations



FCC Part 15 for interference in radio frequency devices



International Electrotechnical Commission (IEC) 61000-4-2 Electrostatic Discharge Immunity Test

Design Requirements:

- → We needed it to be 2 feet in
 length width and height (Office space)
- → Has to be able to detect objects in front it
- → Has to be low noise
- → Needed self correcting navigation



Our Final solution Designs



٠



Solution Implementation !!!

EECE404 S	enior Design II			
Weekly Pr	oject Implementat	ion Plan		
Team Name	Deliveroid			
Final Sol	ution Product	Delivery Robot		
		Dat	es	
Sprint #	Increments	From[MM/DD/YY]	to [MM/DD/YY]	Weekly development tasks
1	Robot Foundation	Feb. 8	Feb. 15	Getting parts together/Researching
				Start build on robot frame
2	Motor Control	Feb. 22	Mar. 1	Finishing Robot assembly
		Mar. 1	Mar. 8	Work on motor alignment
3	Sensors/Softwar	Mar. 8	Mar. 15	Attaching sensors to robot frame
	e	Mar. 15	Mar. 22	Building software and testing
4	Connecting	Mar. 22	Mar. 29	Testing network w/ microcontroller
	Software/Hardwa			Testing robot functions to make sure
	re			robot carries out its instructions
		Mar. 29	Apr. 5	

Team Assignments

2D Map and traversal Arduino Code, simulation area mapping and measurement,	Williams
Network features, Wifi101 module implementations, Frontend and Backend development for client interface with Deliveroid	Michael
Assembled Deliveroid Frame, Testing and troubleshooting multiple errors and unexpected behaviour	AII
3D Model, Frame assembly, Motor selection, Motor coding	Forzando

End Goal All parts explained



Goals:

- Getting parts together
- Start build of robot chassi





• Making sure all motors would rotate in the same direction

Goals:

- Finish robot assembly
- Begin motor control



Troubleshooting:

• Wiring motors to H-bridge motor driver to communicate with Arduino serial port



Goals:

- Attaching sensors to frame
- Building software and testing



• Finding which sensors we needed for the purpose our robot would serve, and work given our constraints



Goals:

- Testing network w/ microcontroller
- Testing robot functions to make sure robot carries out given instructions

Troubleshooting:

• Configuring our network to communicate with Arduino motors, wirelessly



Schematic Design

T.34V SA

Exterior design





Exterior design



Exterior design



How it looks





The Goal





Live Demonstration

In conclusion

We accomplish our goal in creating an autonomous robot

- → Problem Statement
- → Design requirement (gather parts)
- → We completed our weekly goals
 (coding, interior design)
- → Finished the exterior hardware