UC San Diego
JACOBS SCHOOL OF ENGINEERING

Team 12

ECE MAE 148

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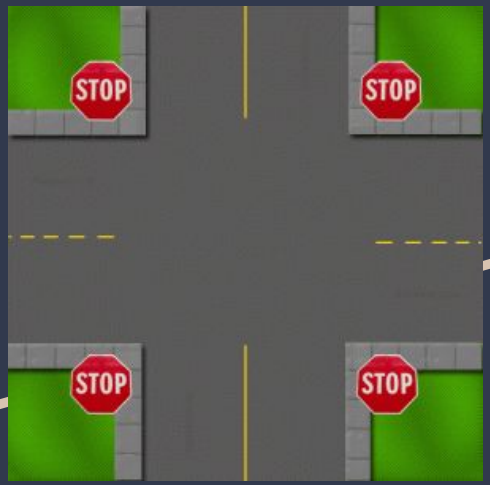
Semi-Autonomous Handling of Four-Way Stops



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Proposed Goals

1. Stay between lines
2. Stop at a stop sign
3. Wait for user input (left, right, straight)
4. Autonomously traverse the intersection

Nice to Haves

1. Right-of-way
2. Obstacle detection

How is it different?

We will combine recognition of traffic signs with autonomous path-finding through intersections
It will use both autonomous driving and user decisions.

What have we done?

Progress

- We can reliably stay between lines
  - Opencv image processing
  - Blue/green color filtering
- We have built model signs, and have supplies for a track
- We can detect stop signs
  - Depthai image detection

Lessons learned

- Crop image to remove background above horizon
- Line Detection is difficult with poor lighting/glare

Challenges

- Stop sign goes out of frame when close

Next Steps

Stop Sign Detection

- Implement Tiny Yolo into our line following algorithm
- We are stopping at a horizontal line on the track
- Identify stop point using high confidence values from Tiny Yolo

Stopping at the line

- May need to implement depth detection to find stop sign distance

Gantt chart: project tasks