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1 Progress

- We will focus on the robustness of the robot. Our aim will be detecting and following the road in the **best** way possible.
- GitHub issues and todos are started to use to keep track of tasks of individuals.
- Canny and Laplacian edge detection algorithms are tried for different color and background options. Photos were taken on CCC floor with different light conditions. Tried colors can be seen in *Figure 1*. Better results are obtained using canny algorithms for green in shadow (*See Figure 2*), red in shadow (*See Figure 3*) and red in light (*See Figure 4*).
- Edge detection is further studied to work in real time video record. The goodness of detection for specific a color varies as the parameters of the algorithm is changed.
- IR sensor fails miserably in terms of both background color and light conditions. No reliable data can be obtained from them. This option is removed from the solutions.
- Some possible chassis structures were discussed. Considering our main focus, palet is superior than classical wheel structure in terms of handling obstacles and balance. That is why first try will be using palet structure. Some possible alternatives are searched on the Internet.
- Handshake medium was decided to be Wi-Fi.

2 Plans

- Wireless connection using Wi-Fi protocol will be studied.
- Optimization of the edge detection algorithm will be done according to the selected color in standard committee.

- Palet and relevant motors will be ordered.
- Supporting wheels for palet structure will be designed and produced.

Appendices

A Photos

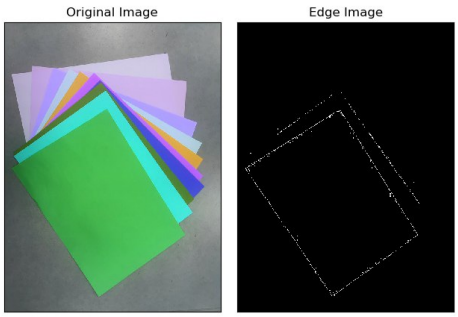

Figure 1: Colors used for edge detection algorithm

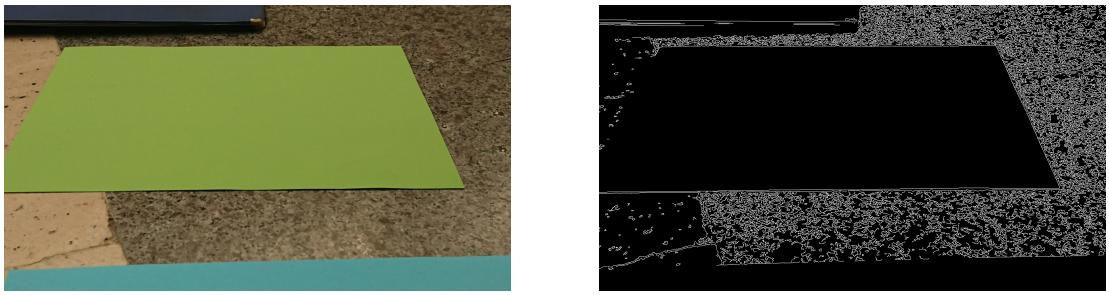

Figure 2: Actual and processed photos for green

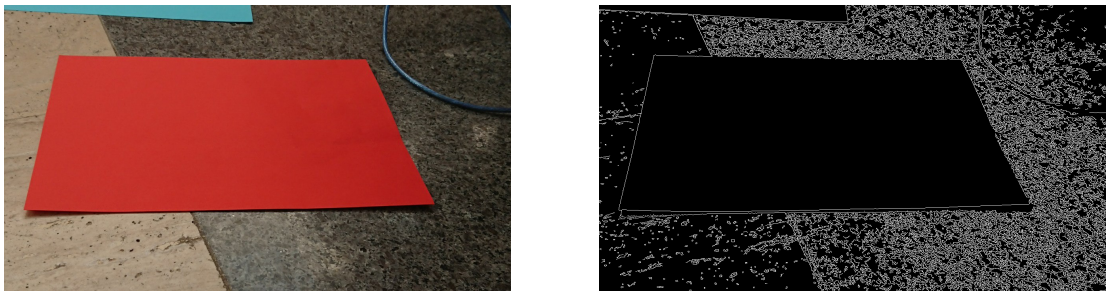

Figure 3: Actual and processed photos for red in shadow

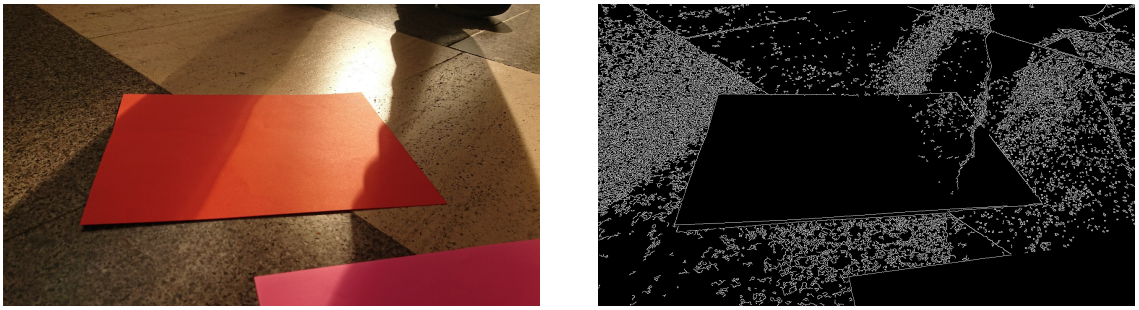

Figure 4: Actual and processed photos for red in light

B Standard Committee Homework

B.1 Path Structure

Our proposed material is styrofoam. Isolation type styrofoams are more durable and strong compared to ordinary ones. A sample can be seen in *Figure 5*

Figure 5: A sample material

The green color RGB(0,255,0) is proposed as the path color.

B.2 Vehicle Appearance

A plate with dimensions 8cm x 10 cm should be installed with 3cm levitation from ground level. The color of the plate should be blue RGB(0,0,255).