Stereo Vision and Collison Avoidance (Simon)

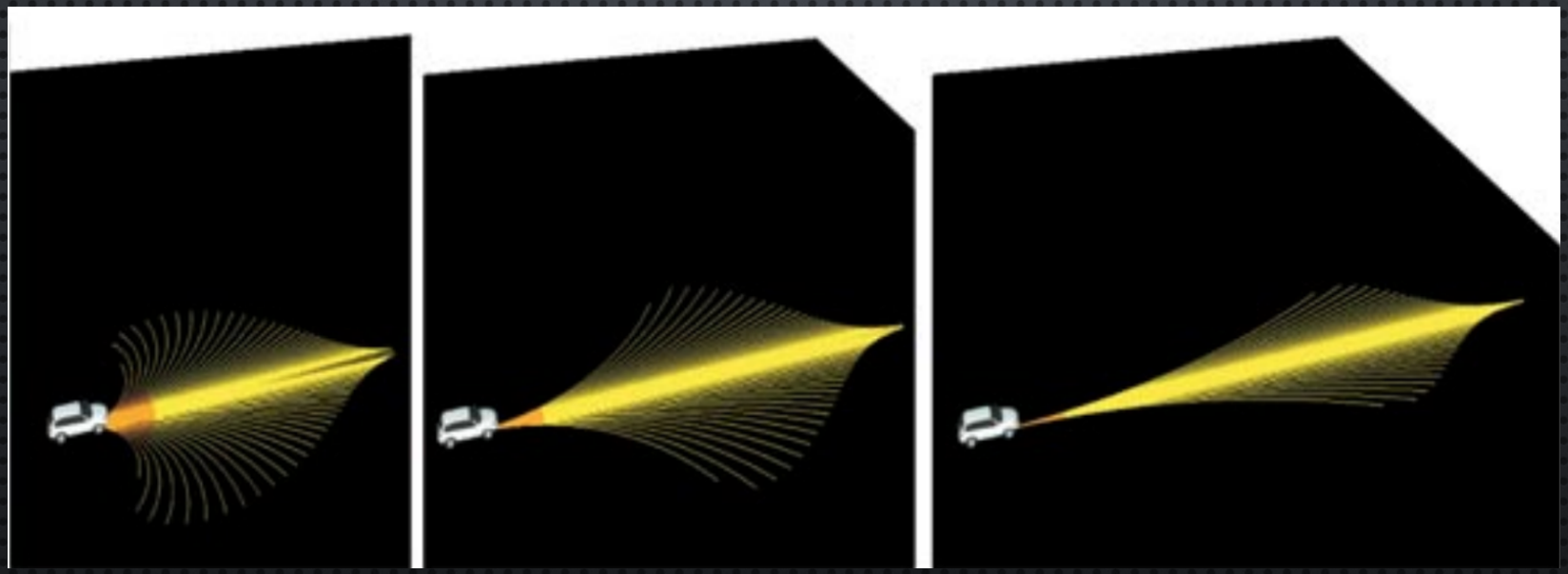
- Improvement of Stereo Camera System
- Implementation of Collision Avoidance with Tentacles

Stereo Vision - Planned Steps

- Refactor existing code to use OpenCV 3.1.0
- Improve stereo camera image quality
  - Either with hardware synced cameras or
  - Single Camera with mirrors/prism to create stereo vision

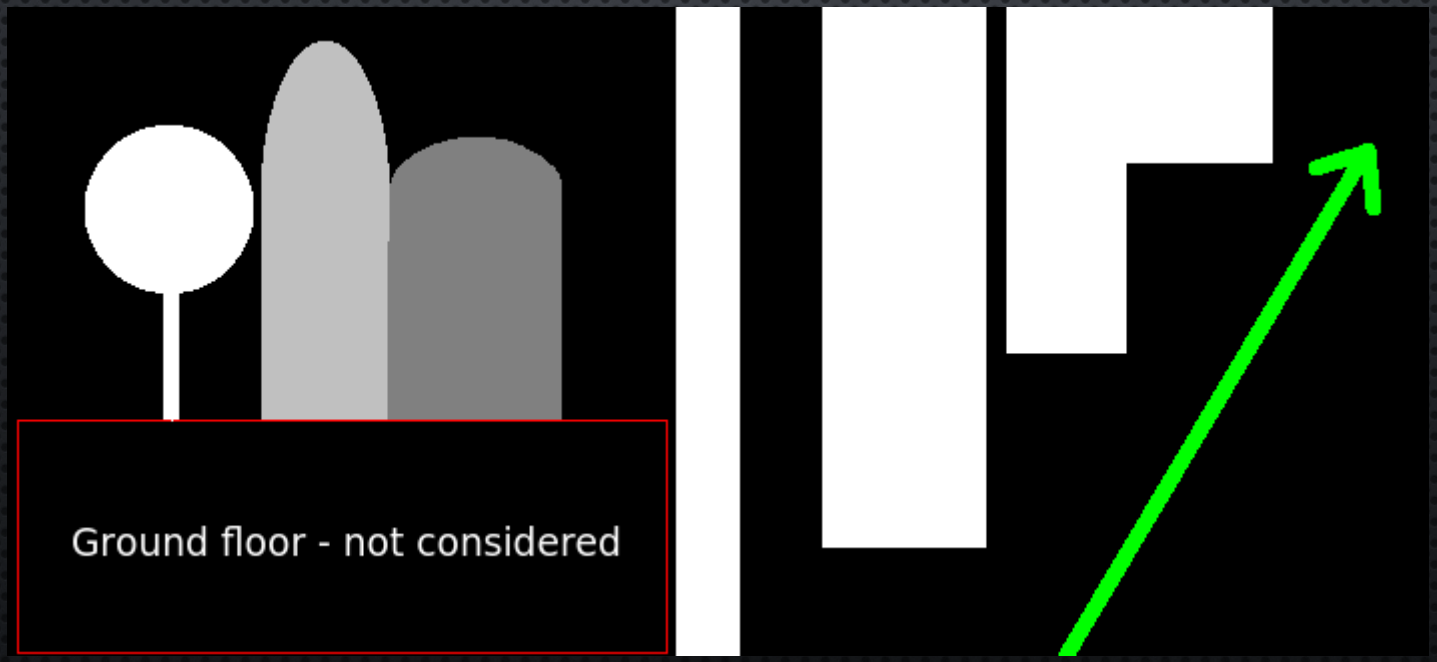
Collision Avoidance - Planned Steps

- Use Tentacle algorithm for path planning



Collision Avoidance - Planned Steps

- Use Tentacle algorithm for path planning
- Avoid collision by using top view depth map



Collision Avoidance - Planned Steps

- Use Tentacle algorithm for path planning
- Avoid collision by using top view depth map
- Return possible steering angles to the drive logic

Current Progress

100% • Refactor and improve current StereoVision code

50% • Improve stereo camera image quality

- Hardware synced PS3 Eye camera prototype
- TODO: Install cameras to car

25% • Collision Avoidance using Tentacles

- Tentacle algorithm implemented by Roger
- TODO: plug into the Stereo Vision Module
- TODO: improve Top View and Depth Map
- TODO: test algorithm and variables for reliable avoidance