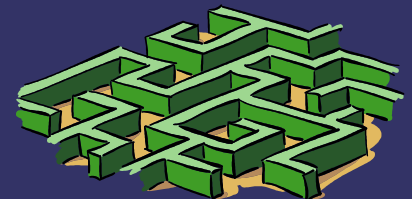


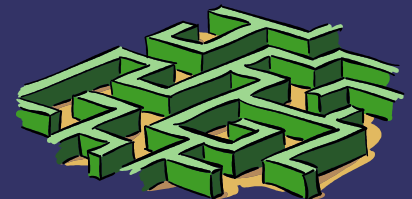
Vision Processing

KSU Willie



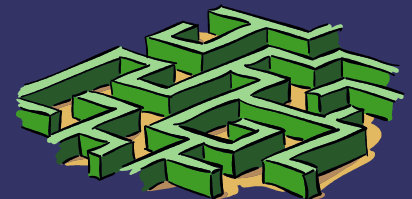
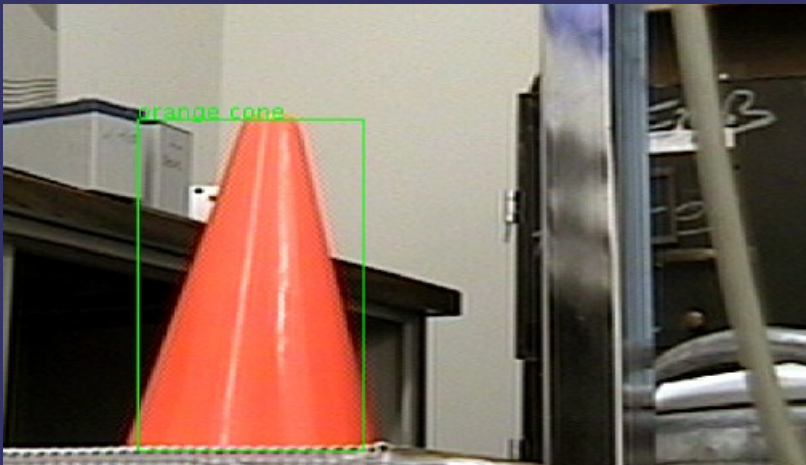
Overview

- ⇒ Techniques
 - SURF based
 - MPM
- ⇒ Object Detection
 - Look at the features learned by SURF Set and MPM that describe the object model and search for that in the camera images



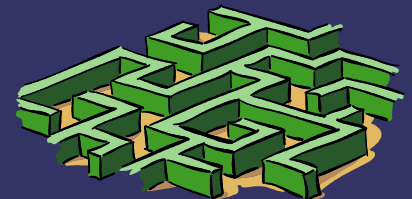
MPM

- ➔ MPM (Marlen Perceptual Model)
 - Color based
 - Finds prominent color relations
 - Performs well on objects that are well defined by its color(s)



MPM

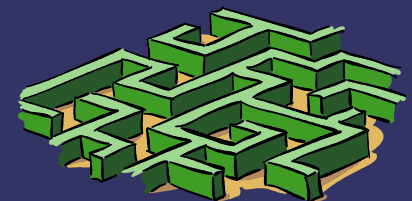
- ➔ Pairs can be treated as “words”
- ➔ Apply a simple Naïve Bayes learning to generate a classifier.
- ➔ Region density/frequency used in classification stage to choose best classified example.



Overview, handling colors

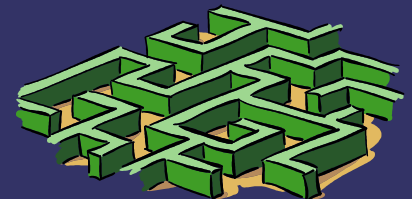


Color Feature Extraction



What didn't work

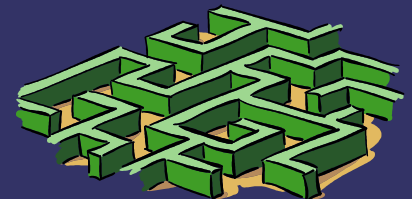
- ⇒ Robot ;)
 - Poor camera resolution
 - Not-very robust navigation



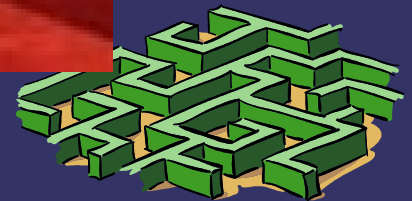
What did work

⇒ Software league

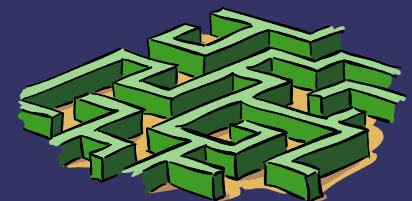
- We were able to extract items without false positives and generated conservative bounding boxes.



What worked



What worked



Questions?



Resources

⇒ SURF

- <http://www.vision.ee.ethz.ch/~surf/>

