

METR4202 -- Robotics

Tutorial 7 – Week 8: SIFT Feature Detection

Reading

Please read/review Lecture 7 (Slides 64-66) as well as the Wikipedia SIFT page.

Software

Please download and install the VL-Feat Toolbox

- METR 4202 website: <http://robotics.itee.uq.edu.au/~metr4202/software/index.html>
- Review the VL-Feat SIFT Tutorial: <http://www.vlfeat.org/overview/sift.html>
- Review the Scale-Space (aka Scale Pyramids) Wikipedia article – this is where the “scale invariant” in SIFT comes from ☺
[NB: The reference text in this space is Lindeberg, *Scale-Space Theory in Computer Vision*]

Questions

1. Imagine you have just met an alien from Mars, briefly describe a “Coffee Cup” to them.

Can you do it in 128 characters?

Can you do in a way that is unique to a soda can?



2. Take 8+ images of the Coffee Cup at various “Yaw” Rotations and import them into MATLAB
3. Use these images to define a SIFT “dictionary” of SIFT “keywords”
4. Use this “dictionary” to help recognize a Coffee Cup can in new and different scene.