

CS 378: Autonomous Intelligent Robotics (FRI)

Dr. Todd Hester

Are there any questions?

- Questions about Hokoyu Laser Scanner:
 - Resolution/Accuracy?
 - Distance 20 mm ~ 1000 mm : ± 30 mm
 - Distance 20 mm ~ 4000 mm : ± 3 % of measurement
 - 0.36°
 - Scan Frequency?
 - 10 Hz
 - Laser Wavelength
 - 785 nm, Class 1 (Infrared 700nm - 1mm)

Logistics

- Anyone still not signed up for wiki?
- Everyone signed up for piazza?
- Issues with the first reading / finding a paper?

- Assignments for Thursday
 - Sign up for github

- Assignments for next week
 - ROS readings for Monday night
 - Add a paper by Tuesday class time
 - Programming Assignment 1 due Thursday 1/31

No Class Thursday!!

- Talk at 1 pm, ACES 2.402
 - Dr. Xiaofeng Ren
 - RGB-D Perception: Solving Real-World Computer Vision with Consumer Depth Cameras

Programming Assignment 1

- Will be assigned Thursday
- Check Piazza and the website!
- Due next Thursday 1/31

1. Download existing BWI code
2. Compile code
3. Run simulator
4. Drive robot with keyboard
5. Give robot navigation goals
6. Look at sensor output

Today

- Finish Robot Hardware Overview
- Discuss Cobot paper

Introductions

- Speak loudly
- Name, year, major
- One other thing about yourself

Turtlebot 2

- Max speed: 65 cm/s
- High resolution wheel encoders
- Cliff sensors
- Bump sensors



AR Drone Copter

- Has wifi
- Forward and downward cameras
- Ultrasound altimeter



- Uses for quadcopter?

Cameras

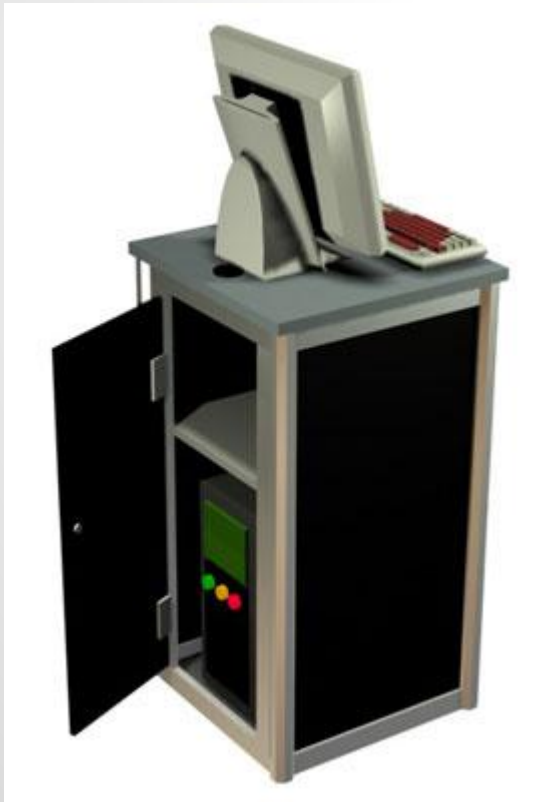
- 1.3 Megapixel Camera
- Run over ethernet
- Max FOV: 111.3 X 83.5 degrees

- Uses for cameras?
- Privacy issues?



Kiosks and Screens

- Possible uses?



Hardware Summary

- Segbot
 - Segway RMP50 base
 - Kinect sensors
 - Possible cameras
 - Laser Scanner
- TurtleBot 2
- External Cameras
- External Kiosks and Display Screens
- Quadcopter

Is this enough?

- What can we do with this hardware?
- What can't we do with this hardware?
- What else would you want to have?
- Would there be advantages to having a humanoid robot?

CoBot



From Paige

CoBot

- Issues with CoBot setup?
- Asking human for help in unfamiliar building?
- Good trade-off of time vs annoying human?
- Advantages of symbiotic relationship?
- Applications to our project?
- Should we ask humans for help on our project?
- Are the CoBot tasks (lead visitor, give tour info, get coffee) good tasks for our project?

Assignments for next week

- Sign up for github
- Reading response due Monday night on wiki
 - Be sure to put your name on your post!
- Add a new paper to the wiki by class time Tuesday
 - Please add your name and week with the paper!
- First assignment due next Thursday!