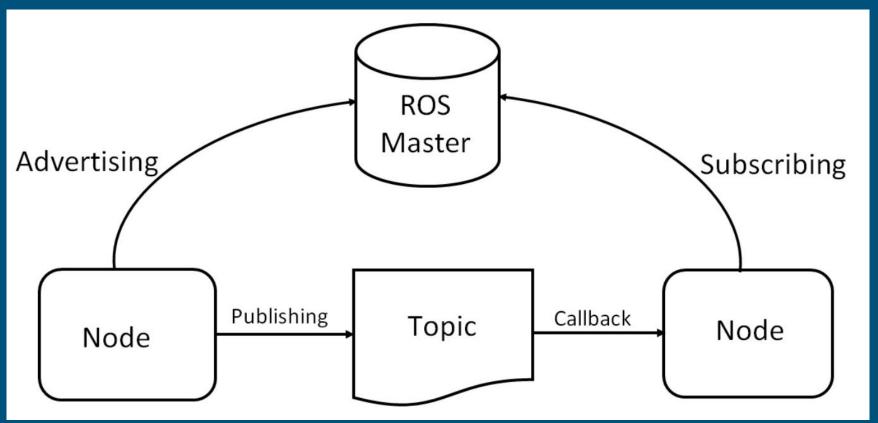
# Firefighter Indoor Navigation: Prototype I

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# System Overview



# Accomplishments

Jordan Thomas Nawar Zak

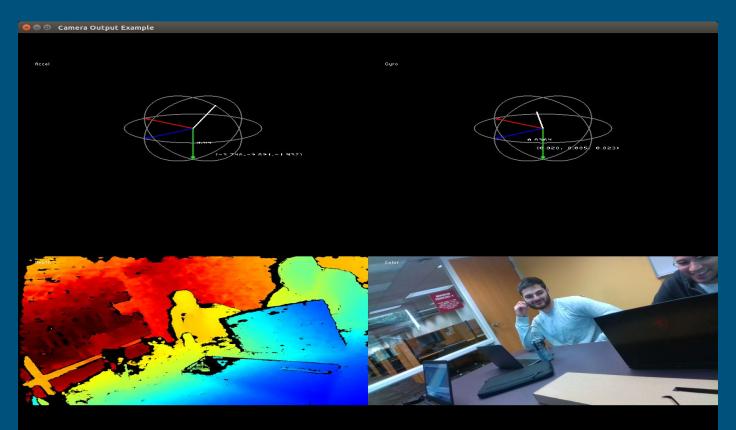
Program
developed for
UP board to
process data
taken from
camera

Script written to convert video file to rosbag

Extracted video file from a ros bag

Put together mockup of GUI on main console

# Capturing Video from Camera



# Converting Video file to ROSbag

		newBag.bag	
Processed frame # 1 2 3 4	Timestamp 0 nsec 333333333 nsec 66666666 nsec 100000000 nsec	version: duration:	100% 334.2 MB  newBag.bag 2.0 30.0s Dec 31 1969 19:00:00.00 (0.00)
5 6 7 8 9 10	133333333 nsec 166666666 nsec 200000000 nsec 2333333333 nsec 266666666 nsec 300000000 nsec	end: size: messages: compression: uncompressed: compressed:	Dec 31 1969 19:00:30.00 (30.00) 32.9 MB 901 bz2 [301/301 chunks; 9.82%] 334.2 MB @ 11.1 MB/s 32.8 MB @ 1.1 MB/s (9.82%) sensor_msgs/Image [060021388200f6
			camera/image_raw 901 msgs :

sensor\_msgs/Image

# ROS Bag Visual Data Extraction

- 1. Image\_view ros package includes tools for image extraction
- 2. Launch file allows multiple ros nodes to be executed
- 3. Roscore, rosbag, and extract node are run
- 4. Extract node turns image messages in the bag to jpg files
- 5. Script moves images into a new folder and generates an mp4 file

#### SLAM on Sample Bag Files

```
Saved Image frame0631.1pg
      [1570037394.155522406]:
                              Saved Image frame8632.jpg
       1570037394.264379700
INFO'
      1570037394.3655646461
                              Saved image frame0633.jpg
INFO
       1570037394.466866352]
                              Saved image frame8634.jpg
INFO
      [1570037394.615782999]:
                              Saved Image frame0635.jpg
INFO'
      [1570037394.768421169]:
                              Saved image frame0636.1pg
INFO
      [1570037394.917382360]:
                              Saved Image frame8637.jpg
INFO'
      1570037395.078184471]:
                              Saved image frame0638,1pg
INFO'
      1570037395.2162583401:
INFO
      [1576037395.316989496];
                              Saved Image frame8648.jpg
INFO'
      1570037395.4651149081:
                              Saved image frame0641, ipg
INFO
       1570037395.569676271]:
                              Saved image frame8642.jpg
INFO
      [1576037395.715843909]:
                              Saved image frame8643.jpg
INFO'
                              Saved image frame0644, ipo
       1570037395.8163462551:
INFO'
      [1570037395.966670704]:
                              Saved image frame8645.jpg
INFO
       1570037396.066933891]:
                              Saved image frame8646.jpg
INFO'
      [1570037396.216321511]: Saved tmage frame0647.jpg
       1570037396.317998732]:
INFO'
                              Saved image frame8648.jpg
INFO?
      [1570037396.466651023]: Saved image frame0649.jpg
INFO
       1570037396.615546830]:
                              Saved image frame8650.jpg
INFO?
      1570037396.716554605]: Saved image frame0651.jpg
      [1570037396.866121742]: Saved image frame0652.jpg
INFO]
      [1578037397.015359903]: Saved trage frame8653.jpg
INFO?
      [1570037397.166699216]: Saved image frame8654.jpg
INFO]
      [1578037397.328179098]: Saved image frame8655.jpg
```

### GUI Mockup

#### **Features include:**

- Text output showing camera connections
- Toggling between cameras 1 and 2
- Toggling different information to display on point cloud

