0329 TEAM B 진행상황

0. Recap

1. What we’ve done.

2. Weekly plan

Recap

Robot for elderly in Nursing Home with Application service

Two main functions

- Strolling Assistant

- Emergency service using deep-learning

- Work in gazebo simulation

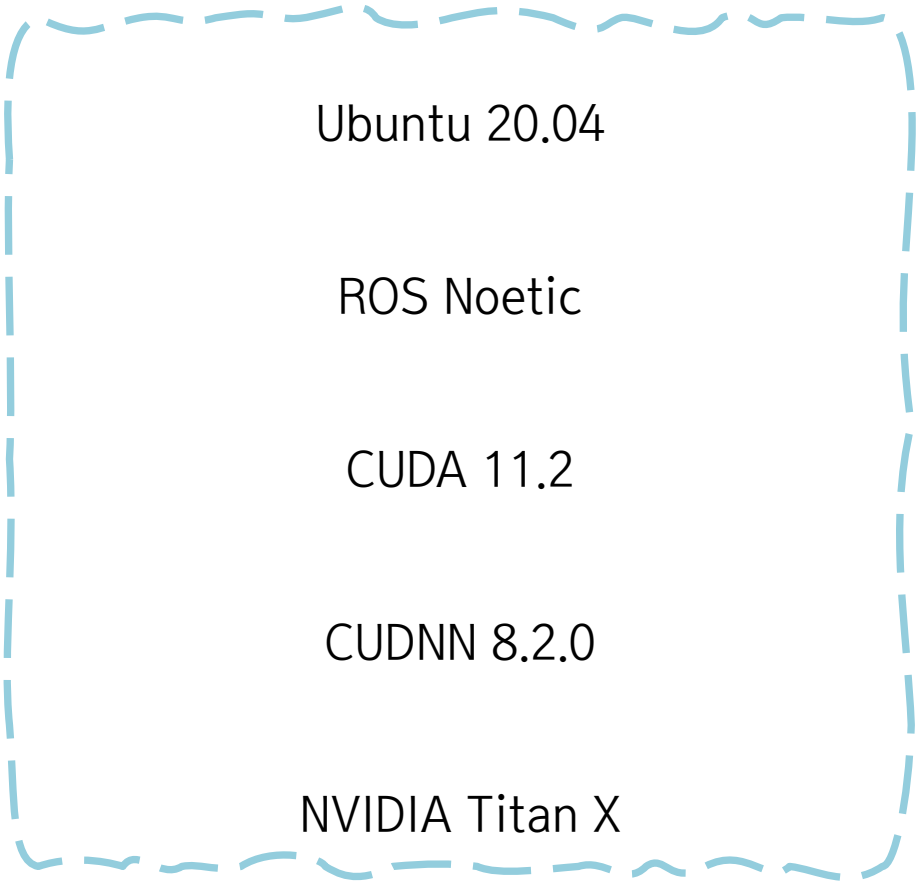
- ROS (Robot operating system)

1

What we’ve done.

1 What we've done.

- Environment



1 What we've done.

- Select our model

Our model : Turtlebot3 Waffle

Robot model from ROBOTIS.

Have simulated model in Gazebo

ROS implementation possible -> essential for development

1 What we've done.

- Navigation Stack in ROS

One of the most popular ROS package (Requirement for mobile robots!)

Localization, Global-local path planning, Velocity switching possible

We just need to point where to go in the map!

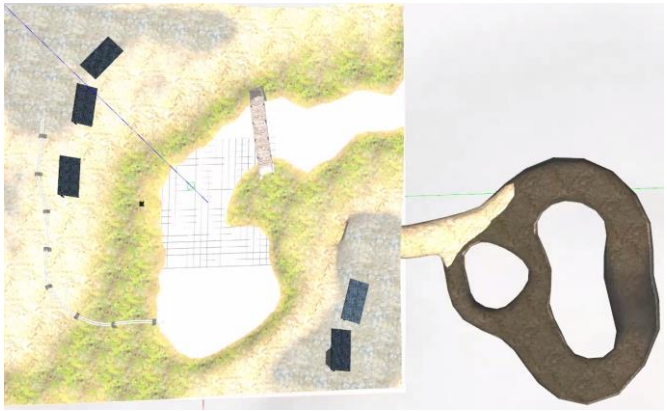
Implement Nav. Stack in Turtlebot Waffle succeed.

1 What we've done.

- Selecting map

Indoor map

Outdoor map



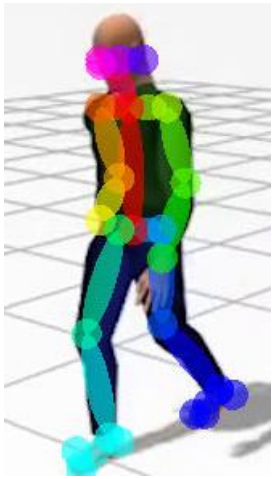
Merge two map seems impossible but we're discussing . . .

1 What we've done.

- Gazebo actor & Openpose

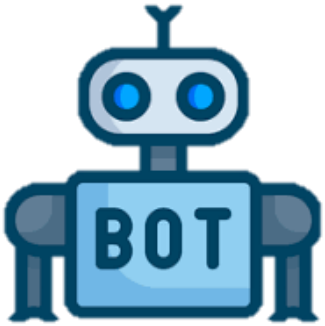
Gazebo has an human animated model "actor"
We' ll use it as a human model

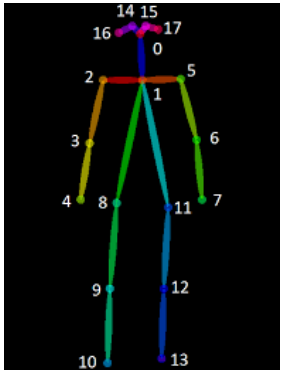
We successfully implement Openpose(Pose estimate detector) in ROS.

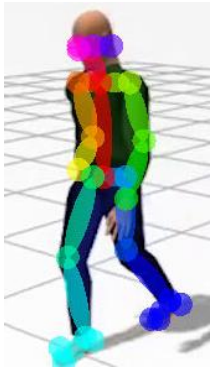


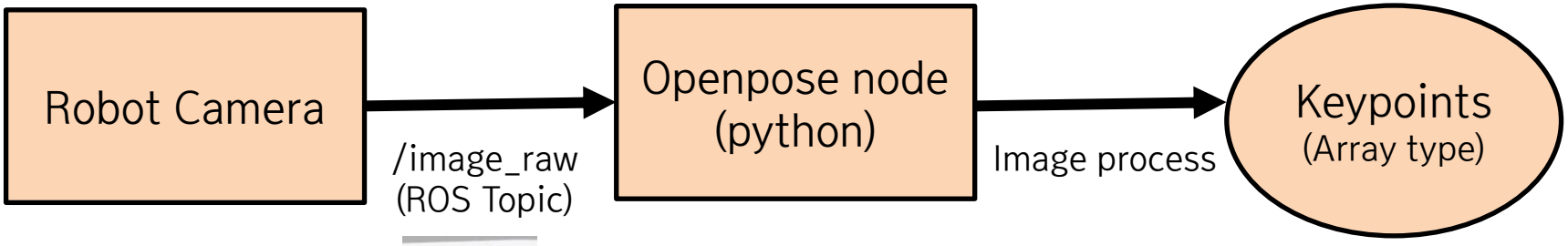
1 What we've done.

- Specific architecture of Openpose









1 What we've done.

- Gazebo Actor plugin

Actor isn't same as Robot! -〉 How do we move(control) actor?

We control robot by Navigation Stack.

Actor is controlled by "Plugin" (Add it on a gazebo file)

Cpp file -〉 we are still on develop

2

Weekly plan

2 Weekly plan

	Week6	Week7	Week8	Week9	Week 10 presentation	Week11	Week12	Week13	Week14	Week 15 final presentation
Robotics	Setting on Gazebo	Add user model	Navigation Stockport Edit robot model	Set Navigation Stack parameter			Check navigation function	Test and trouble shooting		
DL			Train model							
Frontend	Build app for user	Build app for user	Login feature	Connect with robot		Emergency alert message	Build app for admin			
Backend		Design Database	set API for emergency	Connect robot with app		Set API for command log				
Document	Proposal document							Final document		

Since we’ve finished Navigation Stack port.
We’re going to focus more on. . .

- Actor Plugin
- Detecting people laying down using pose estimation(OpenPose)
- Starting Front-end work