CMPT 419 Assignment #3
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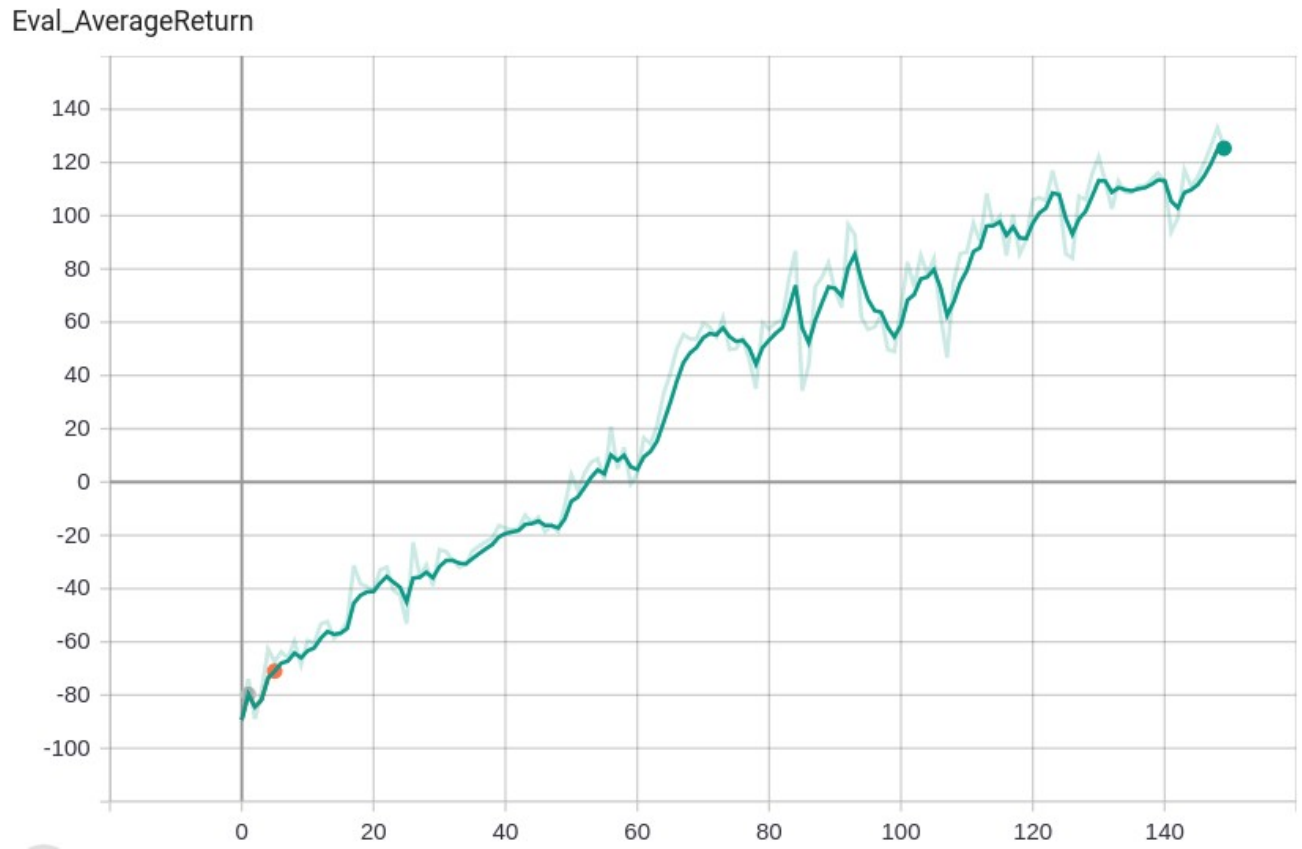
// Please excuse the formatting, I have not used LibreOffice before.

Question 1

I have completed `sample_trajectory`, `update` and `estimate_advantage`, and the other `update`. Training with the specified prams was successful and the `Eval_AverageReturns` from Tensorboard is below,



Code is submitted along with this doc

Question 2

The ekf.py node is called ekf_ekf, it Publishes *odom_ekf*. visualizer.py node is called visualizer_visualizer, it Subscribes to *odom_ekf and Publishes* ***secound_map***

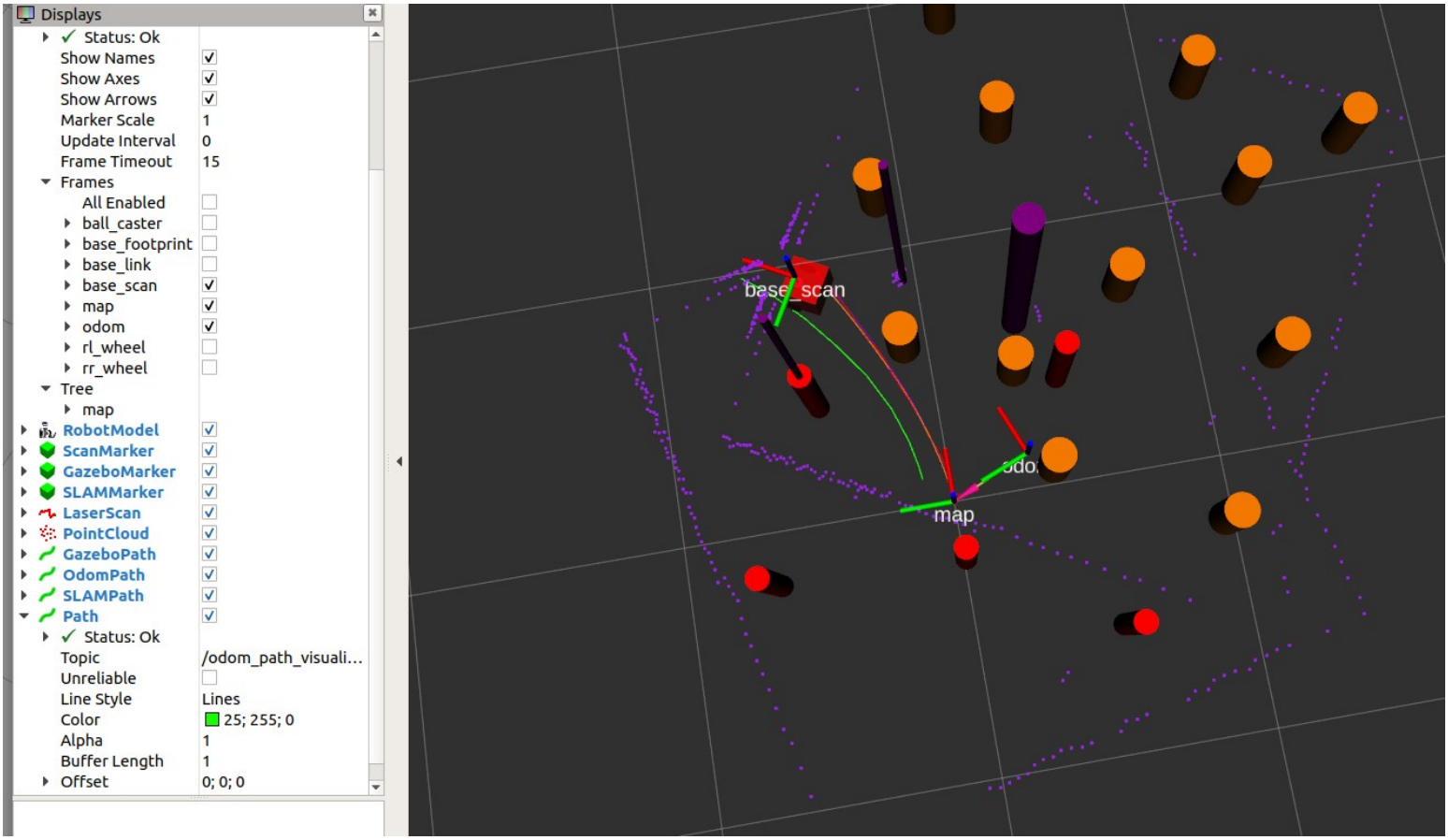
To run:

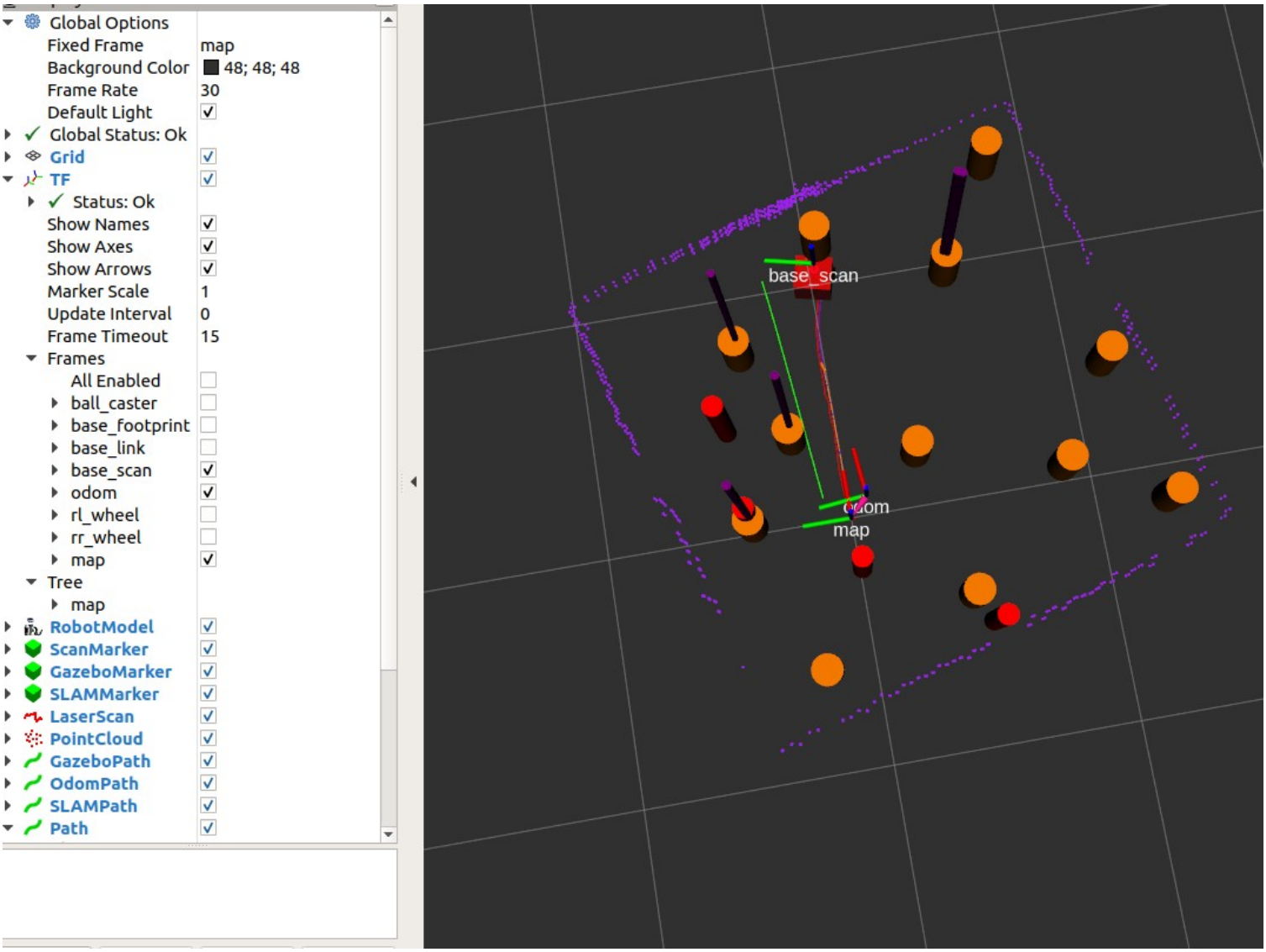
catkin build
source devel/setup.bash
roslaunch python_ekf start_ekf.launch

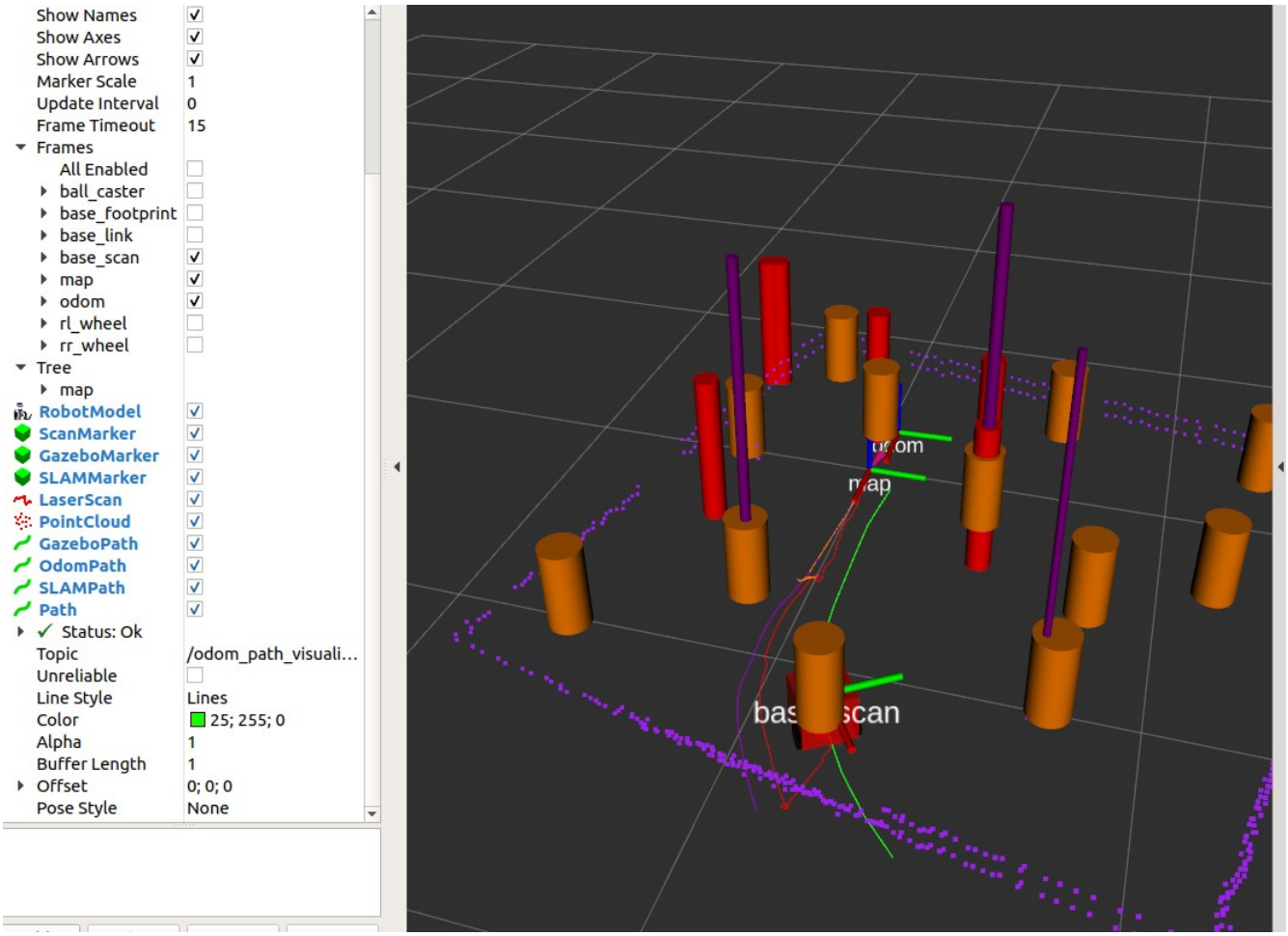
Annotation

Rviz output when running the slam.launch and navigating the robot around. Data annotation: EKF: orange, Wheel Odom: purple, Gazebo(GT): red, and finally **EKF SLAM in python: Lime Green**

Five screenshots are below:




Global Options
Fixed Frame
map
Background Color
48; 48; 48
Frame Rate
30
Default Light
Global Status: Ok
Grid
TF
Status: Ok
Show Names
Show Axes
Show Arrows
Marker Scale
1
Update Interval
0
Frame Timeout
15
Frames
All Enabled
ball_caster
base_footprint
base_link
base_scan
odom
rl_wheel
rr_wheel
map
Tree
map
RobotModel
ScanMarker
GazeboMarker
SLAMMarker
LaserScan
PointCloud
GazeboPath
OdomPath
SLAMPath
Path
base_scan
odom
map



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Please note this code does have issues. I could not get `*ekf.msr_update(measurements)*` to work as intended. It is commented out, out of fear that it might cause my code to brash when your mark. *msr_update* when i run it, explodes to a large number and I do not see the green line/path. Maybe its a bug and numerical stability. I can subscribe and publish as intended.