ZHUORU ZHANG

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portfolio: https://shirleyzzr1.github.io/

EDUCATION

East China Normal University   *Sept.,2016 - Jun.,2020*
B.E. in Telecommunication Engineering GPA:3.62/4.0 (86/100)   *Shanghai, China*
Northwestern University   *Sept.,2020 - Dec.,2022(expected)*
Master of Science in Robotics(MSR) GPA:4.0/4.0   *Evanston, IL*

EXPERIENCE

Software Engineer Intern   *gHz Tech, Shanghai, China /Mar.,2022 - May.,2022*

- Designed an Android app to get real-time wireless signal measurements through AT command, send them back to the server through socket, and visualize the result received from server
- Developed a server using Java to communicate with android phone,saving the signal for some time and calculated the position using fingerprint method based on RSRP

PROJECTS

3D Object Detection from Point Cloud   *Jan.,2022 - Mar.,2022*

- Pre-segmented point cloud from a known scene using ground removal and DBSCAN method
- Trained pointnet with Pytorch to classify over different point and reached 85% accuracy
- Extracted point clouds from a given bounding box and generated 3D orientated bounding box based on classified point cloud

Robot Arm 3D Scanner   *Mar.,2022 - Mar.,2022*

- Designed the pipeline using both C++ and python for robot arm control and point cloud capture
- Processed the point cloud data by cropping and filtering, and reconstruct the 3D image by transforming all the captured frames to same coordinate using PCL

SLAM Differential Drive robot from Scratch   *Jan.,2022 - Mar.,2022*

- Designed the C++ library to calculate the rigid body transformation and inverse,forward kinematics for a differential drive robot model
- Implemented the Extended Kalman filter based on odometry and simulated landmark detection signal and lidar data

Particle Detection System   *Jan.,2021*

- Built the application using UART to communicate with peripherals using C++ on Windows CE
- Designed the UI of the system in QT to visualize the data in real time and used sqlite database to filter the needed data based on date and standard

AI Robust Unmanned Aerial Vehicle(UAV) Design   *April.,2018 - June.,2019*

- Researched on inertial navigation theory and attitude algorithm
- Designed an UAV capable of static and robust hovering and automatic control
- Tuned proper PID parameters in velocity, position and height control
- Wrote shape detection and object detection modules using OpenCV package in python

TECHNICAL SKILLS

Programming   Proficient:Python,Matlab Intermediate:C++,Java
Other   ROS,GIT,LINUX,QT