Fetullah Atas

Robotic Software Engineer

Contact Information

Address
Taipei City,
Taiwan

Phone
+886-909-561-094

Email Address
fetulahatas1@gmail.com

Website
jediofgever.github.io

Skills

C++

ROS1, ROS2

Mobile Robots, Robotic Arms

ROS Moveit!, ROS Navigation Stack

3D Vision and Perception

Motion Planning and Navigation

OpenCV, PCL, OpenVino

Linux, Git, QT

Object Recognition in 2D and 3D

Languages

English

Kurdish

Turkish

I am a highly motivated and passionate Software Engineer with a special interest for autonomous robots and its applications. Experienced on developing software for various robotics platforms(mobile, arms) ranging from research to industrial level. Strong understanding and software developmental skills in robot perception, scene understanding and planning. Fluent in C++ and ROS1 , sufficient in Python. Currently focused on getting a stronger grasp of ROS2.

Work Experience

Chicony Electronics Co.

(08/2019 - Ongoing)

Robotic Software Engineer

----------PART1----------

- Responsible for development of robotic project, with the aim of achieving vision based auto pick-place of various objects
- Developed QT based UI for interacting with robot
- Trained and validated various CNN architectures(MaskRCNN, YOLO) for custom object detection in 2D and 3D
- Contributed to a few open source ROS packages in order to include new models of industrial robots
- Rewrote a custom calibration stack(ROS stacks) for different types of camera calibration tasks(Hand-Eye, Eye-Base, Camera intrinsic calib), with an automated fashion
- Integrated various robot models(Staubli, Fanuc) with Gazebo simulator, for testing and validating software in advance
- Authored close to 10 ROS packages in context of the project
- Single-handedly achieved vision based pick and place that can be ported to any ROS supported 6DOF robots
- Watch a quick demo; https://www.youtube.com/watch?v=BOb7jN4NzDo

----------PART2----------

- Started the RD process of building and simulating ROS2 based AGV
- Built a primitive version of differential drive Mobile robot that autonomously navigates in pre-built map(by google cartographer), uses the new Navigation2 by ROS2

Mindtronic AI

(05/2018 - 03/2019)

Perception Engineer

- Responsible for autonomous vehicle and its sensor simulation under different simulators such as Gazebo and CARLA
- Took a part to design and apply the perception architecture of autonomous vehicle
- Integrated results of perception into vector map ,which was an unified representation of real world inside the system
- Wrote much simpler and efficient Cost-map which was used for local path planning, obstacle avoidance and other Grid Cell based perception algorithms
- Achieved obstacle detection and obstacle localization in unknown environments using Lidar data
- Developed C++ code for Lidar based Object detection and tracking for autonomous driving with Kalman filter
- Actively used PCL and OpenCV for segmentation, clustering and other manipulations on Lidar Point Clouds and Images
- Implemented several Gazebo models and world plugins including intelligent agents radar sensor plugin

National Taipei University of Technology

(09/2017 - 08/2019)

Graduate Researcher

- CNNs for object detection, mainly focused on urban areas for autonomous driving
- 2D and 3D SLAM of indoor environments using Google Cartographer for mobile robot navigation with ROS navigation stack
- Robot path planing and observing using IMU and 2D Lidar
- Sensor fusion for autonomous vehicle perception, especially Lidar and camera
- Sensor calibration tasks, Lidar and 3D camera(ZED) calibration
- 3D scene understanding using 3D Lidar point clouds and RGB image

Education

National Taipei University of Technology (2017 - 2019)

Master's Degree, Mechatronics Engineering

Thesis Topic: A New Real-Time 3D Detection Framework Based on Instance Segmentation

Istanbul Technical University (2016 - 2017)

Master's Degree, Mechatronics Engineering

Partially completed this degree

Istanbul Gelisim University (2011 - 2015)

Bachelor's Degree, Mechatronics Engineering

Notable SIDE PROJECTS

PointNet Custom Object Detection

A project that show cases, train and testing of PointNet with custom objects/datasets

- Describes steps to prepare and label the data for training
- Provides scripts for data augmentation that helps improving overall accuracy
- Describes and provides pseudo C++ for collecting custom data from various depth cameras and Lidar. PointCloud2 type is supported.
- https://github.com/jediofgever/PointNet_Custom_Object_Detection

ROS KITTI Perception

Ros Package to access manipulate and process Raw KITTI dataset

- Perception extracted from self driving car sensors including Lidar, Radar, camera etc.
- Sensor fusion between Lidar and Camera
- Various utility functions that are used in autonomous vehicle development project
- Local cost map extracted from Lidar, to be used for collision avoidance
- https://github.com/jediofgever/ROS_Raw_Kitti_Player

References

Eduardo Munera, PhD
Senior Software Engineer
eduardo.munera@gmail.com

Roy Le, PhD
Senior Software Engineer
lemanhtrung@gmail.com

Personal Information

Date of Birth
18th September 1993

Linkedin
https://www.linkedin.com/in/fetatas/

Github
https://github.com/jediofgever