

Projects

The followings are the projects I've been working on Github. I tried to put the most recent one up-front, but sometimes I go back and forward from one to another.

- [GCP and dump1090 aircraft data collection and visualization](#): Experiments with dump1090/FightAware receiver capturing and visualizing airplane traffic.
- [PX4 SITL ROS Examples](#): PX4 SITL with ROS and Gazebo examples.
- [NVIDIA Jetson TX1 OpenCV 101 Tutorials](#): Here you will found the code from the OpenCV 101 tutorials. The tutorials a bit old and there are a couple of things that need to be fixed to be implemented with OpenCV 3.3.1.
- [ROS Ignite Academy : ROS in 5 Days projects](#): I am playing with ROS Ignite Academy and ROS. This repo contains all the code I wrote there.
- [Udacity's Deep Learning Nanodegree - SageMaker Deployment](#): Contains a few tutorials, mini projects and a project using SageMaker for NPL.
- [DJI Service](#): DJI Mobile Service SDK on an Android Things application.

Udacity's Flying Car Nanodegree

- [3D Estimation](#): Extended Kalman Filter(EKF) implemented with C++. we need to fusion noisy GPS, IMU, and compass(magnetometer) to estimate current drone position, velocity, and yaw.

- 3D Quadrotor Controller: Implement and tune a cascade PID controller(C++) for drone trajectory tracking.
- 3D Motion Planning: Planning and executing a trajectory of a drone in an urban environment.
- Backyard Flyer: Control a simulated drone using python to fly in a square trajectory in a backyard.

Udacity's Self-Driving Car Engineer Nanodegree

Term 3: Path planning, concentrations, and systems

- Capstone: Create a set of ROS packages to drive Carla, Udacity's self-driving car. This ran in a real car!
- Functional Safety: Functional safety documentation for a Lane Assistance system under ISO 26262.
- Semantic Segmentation: Semantic segmentation using fully convolutional networks(FCN).
- Path Planning: Path planning algorithms to drive a car on a highway using Udacity's simulator.

Term 2 : Sensor fusion, localization and control

- Model Predictive Control: Model Predictive Control (MPC) implementation to control a car in Udacity's simulator.
- PID: PID controller to control a car on Udacity's simulator.
- Kidnapped Vehicle => Particle filter: Kidnapped Vehicle project. Particle Filter applied to A Kidnapped robot problem.
- Unscented Kalman Filter: Unscented Kalman Filter Implementation with C++. A simulator generates noisy RADAR and LIDAR measurements of the position and velocity of an object, and the Unscented Kalman Filter[UKF] must fusion those measurements to predict the location of the object.

- Extended Kalman Filter: Extended Kalman Filter Implementation with C++. A simulator generates noisy RADAR and LIDAR measurements of the position and velocity of an object, and the Extended Kalman Filter[EKF] must fusion those measurements to predict the location of the object.

Term 1: Deep learning and computer vision

- Vehicle Detection: Vehicle Detection using Linear SVM classifier and computer vision.
- Advanced Lane Lines Finder: Advance Lane Line Finder on a Video Stream.
- Behavioral Cloning: Behavioral Cloning. Trying to reproduce my driving behavior in a simulated environment using LeNet and Keras.
- Traffic Sign Classifier: Traffic Sign Classifier. The project consists of training a Convolutional Neural Network to recognize traffic signs.
- Lane Lines Finder: Finding Lane Lines on the Road. This project consists of algorithms to identify lane lines on the road on a video. The video is taken from a camera at the center of a vehicle.

Scala projects

- Kamon Logstash back-end: Kamon-stash back-end module. Using ELK(Elasticsearch-Logstash-Kibana) for data collection and visualization for Kamon.
- Advent of Code: Problem Advent of Code site problems solutions with Scala.
- Family Playground: Proof of concept for a REST-full service using Scala/Play, Elasticseach and Couchbase.
- Airplane Adventures: Using Scala to process the information of a Dump1090/Flightaware receiver.

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Explore the different categories

Scala / Self-Driving cars / Serverless / Autonomous flight / Kubernetes / All