# Formula Student AMZ Driverless Repository Research

## Available material:

### Datasets:

FSOCO:

* URL: [www.fsoco-dataset.com](https://www.fsoco-dataset.com/)
* The FSOCO dataset which The FSOCO dataset helps Formula Student / FSAE teams to get started with their visual perception system for driverless disciplines.
* FSOCO contains bounding box and segmentation annotations from multiple teams and continues to grow thanks to numerous contributions from the Formula Student community.

AMZ Driverless 2017 Dataset:

* Download: [AMZ\_driverless\_2017\_dataset.bag.tar.gz](https://www.dropbox.com/scl/fi/rbwas11s9co85bcm0ukk4/AMZ_driverless_2017_dataset.bag.tar.gz?rlkey=l1r541f5z3isjs5oybqsllgh5&e=1&dl=0)
* Telemetry data collected in Zurich

AMZ Vision Dataset:

* GitHub: [SERVO/Examples/ROS at master · grafue/SERVO · GitHub](https://github.com/grafue/SERVO/tree/master/Examples/ROS)

### Software:

Rosbag Bazaar:

* Sorage management [GitHub - AMZ-Racing/rbb\_core: Rosbag Bazaar (RBB) core packages](https://github.com/AMZ-Racing/rbb_core)

MIT Driverless Computer Vision:

* Computer vision algorithm fom MIT using pytorch: [GitHub - cv-core/MIT-Driverless-CV-TrainingInfra: PyTorch pipeline of MIT Driverless Computer Vision paper(2020)](https://github.com/cv-core/MIT-Driverless-CV-TrainingInfra)

Model Predictive Contouring Controller (MPCC):

* Controller used for car motion: [GitHub - alexliniger/MPCC: Model Predictive Contouring Controller (MPCC) for Autonomous Racing](https://github.com/alexliniger/MPCC)

Global Race Trajectory Optimization:

* Algorithm used to optimize trajectory: [GitHub - TUMFTM/global\_racetrajectory\_optimization: This repository contains multiple approaches for generating global racetrajectories.](https://github.com/TUMFTM/global_racetrajectory_optimization)

FSD-Skeleton:

* Repository with Ros packages regarding, perception, estimation and control: [GitHub - AMZ-Racing/fsd\_skeleton](https://github.com/AMZ-Racing/fsd_skeleton)

Relevant robotics algorithms:

* Slam, mapping, localization, pathplanning/tracking , etc: [GitHub - AtsushiSakai/PythonRobotics: Python sample codes for robotics algorithms.](https://github.com/AtsushiSakai/PythonRobotics)

Rapidly exploring random trees:

* Algorithm used for path exploration for the circuit: [GitHub - MaxMagazin/ma\_rrt\_path\_plan](https://github.com/MaxMagazin/ma_rrt_path_plan)

### Extras:

The MAZ repository also contains simulation information, conference papers related to driverless FS cars and presentations/videos.

## Sources:

Main repository: [GitHub - AMZ-Racing/fsd-resources](https://github.com/AMZ-Racing/fsd-resources?tab=readme-ov-file#amz-driverless-2017-dataset)