ROSBag2nuScenes: Share the Bags, Spread the Joy - Autonomous Vehicle ROS Datasets Deploy

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- Researching the Intersection of Machine Learning and Vehicle Dynamics Modeling
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ROS™ Bags are Great…
...But Only if You Use ROS
Autonomous Vehicles Research

- Machine Learning
- Robotics
- Computer Vision
- Human-Machine Interaction
- Sensor Networks
- Security
- Embedded Systems
- Safety
- ROS Users
nuScenes is Widely Used
The nuScenes Dataset Format

JSON Files

Vehicle Info  Odometry + Sensor Data  Annotations  Object Info

Camera 1

Lidar 3
The ROSBag2nuScenes API

- ROS Bag
- URDF File
- Param File (YAML) (User Must Create This)

Usage:
```
> ./Bag2Scenes
```

Output:
- JSON Files
Tutorial: Bag to nuScenes Param File

```
params > ! mit.yaml

BAG_INFO:

1. Provide context and ego odometry topic

TEAM: MIT-PITT-RW
DESCRIPTION: Low speed multi-agent laps with KAIST
ODOM_TOPIC: /vehicle_8/local_odometry
TRACK: IMS

URDF: urdf/av21.urdf

2. Provide path to URDF

SENSOR_INFO:

3. Provide sensor topics + frames

LIDAR_FRONT:

TOPIC: /luminar_front_points
FRAME: luminar_front

CAMERA_FRONT_RIGHT:

TOPIC: /camera/front_right/image/compressed
FRAME: camera_front_right
CALIB: /camera/front_right/camera_info

RADAR_FRONT:

TOPIC: /radar_front/esr_track
FRAME: radar_front
```
Tutorial: Bag to nuScenes

./rosbag2nuscenes {path to bag} {path to param} {output path} {num threads}
ROS Data in nuScenes Format!
Deploy Your Datasets!

https://github.com/linklab-uva/robag2nuscenes

RACECAR Dataset
(https://github.com/linklab-uva/RACECAR_DATA)

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