How To Import A new Vehicle To Carla

# Big Picture

We are going to train FCOS3D to detect objects in 3D in a construction scenario. But the challenge is that most of the open source data sets are gathered in usual city scenarios, so are not very useful for object detection in construction scenarios.

We are going to generate synthetic data for construction vehicles, and enrich the existing open source datasets (NuScenes in particular) with our generated synthetic data. Take a look at [this short slide](https://docs.google.com/presentation/d/12CzPxS_wlAZMMw7ZQnzx_lcMY2-9PO-I3NUGEEL3CjQ/edit#slide=id.geb3eb2fe4f_0_35) please.

# Import New Vehicle

Carla comes with a bunch of 2 or 4 wheeled vehicles. And also, one can import its desired vehicle to Carla. The challenge is that at the time, Carla supports 2 and 4 wheeled vehicles that excludes many construction vehicles. However, it does not mean we cannot import a vehicle to Carla without 2 or 4 wheels, it just means Carla can't simulate Kinematic and Dynamic of those vehicles so it cannot drive them with its autopilot.

To import a new vehicle to Carla we have to follow a few rules that are mentioned in [Carla documentation.](https://carla.readthedocs.io/en/latest/tuto_A_add_vehicle/) I also find this video very useful and I suggest you follow [this video](https://www.youtube.com/watch?v=0F3ugwkISGk) as the main guide.

**Briefly one have to follow these steps:**

* Install Unreal engine and Carla From source
* Purchase a construction vehicle from Unreal or Unity marketplace and import in a 3D design software like Blender.
* Export one of the existing vehicles in Carla to FBX format and import it to Blender as well.
* Replace the existing vehicle’s meshe with the construction vehicle meshe.
* Import the model to Carla.
* Set the textures of the imported construction vehicle in Carla. [Take a look here.](https://drive.google.com/file/d/1LDtqnI22Hq5QjpZB9yRT6uN-S5g_ZVRD/view?usp=sharing)