
Project Title:- Multiple Type Of Vehicle Counting From Real World Video

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1.Opencv:-

- **OpenCV is the huge open-source library for the computer vision, machine learning, and image processing and now it plays a major role in real-time operation which is very important in today's systems. By using it, one can process images and videos to identify objects, faces, or even handwriting of a human.**

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2. torch:-

- **Torch is an open-source machine learning library, a scientific computing framework, and a script language based on the Lua programming language.**
- **It provides a wide range of algorithms for deep learning, and uses the scripting language LuaJIT, and an underlying C implementation.**

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3. torch.nn.functional:-

- **functional provides some layers / activations in form of functions that can be directly called on the input rather than**
- **defining the an object. For example, in order to rescale an image tensor, you call torch**

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4. glob:-

- **Glob is a general term used to define techniques to match specified patterns according to rules related to Unix shell.**

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5. PIL:-

- **Python Imaging Library. Python Imaging Library (abbreviated as PIL) (in newer versions known as Pillow) is a free library**
- **for the Python programming language that adds support for opening, manipulating, and saving many different image file formats.**

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6. torch.utils.data:-

- It automatically converts NumPy arrays and Python numerical values into PyTorch Tensors. It preserves the data structure,
- e.g., if each sample is a dictionary, it outputs a dictionary with the same set of keys but batched Tensors as values
- (or lists if the values can not be converted into Tensors).

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7. torchvision.transforms:-

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8. tenserflow:-

- It is an open source artificial intelligence library, using data flow graphs to build models.
- It allows developers to create large-scale neural networks with many layers. TensorFlow is mainly used for:
- Classification, Perception, Understanding, Discovering, Prediction and Creation.

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9. __future__-dividion,print_function:-

- The future statement is intended to ease migration to future versions of Python that introduce incompatible changes
- to the language. It allows use of the new features on a per-module basis before the release in which the feature becomes standard. and then access it as usual.

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10. tqdm:-

- TQDM is a progress bar library with good support for nested loops and Jupyter/IPython notebooks.

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11. torch.autograd:-

- **Autograd is now a core torch package for automatic differentiation. It uses a tape based system for automatic differentiation.**
- **In the forward phase, the autograd tape will remember all the operations it executed, and in the backward phase, it will replay the operations.**

Other Apis We have used but They are well known:-

- **matplotlib.patches:-**
- **skimage-io:-**
- **argparse:-**
- **filterpy.kalman:-**
- **PyQt5.Qtcore:-**
- **Qtgui,QtWidgets:-**
- **copy:-**
