

Module 11

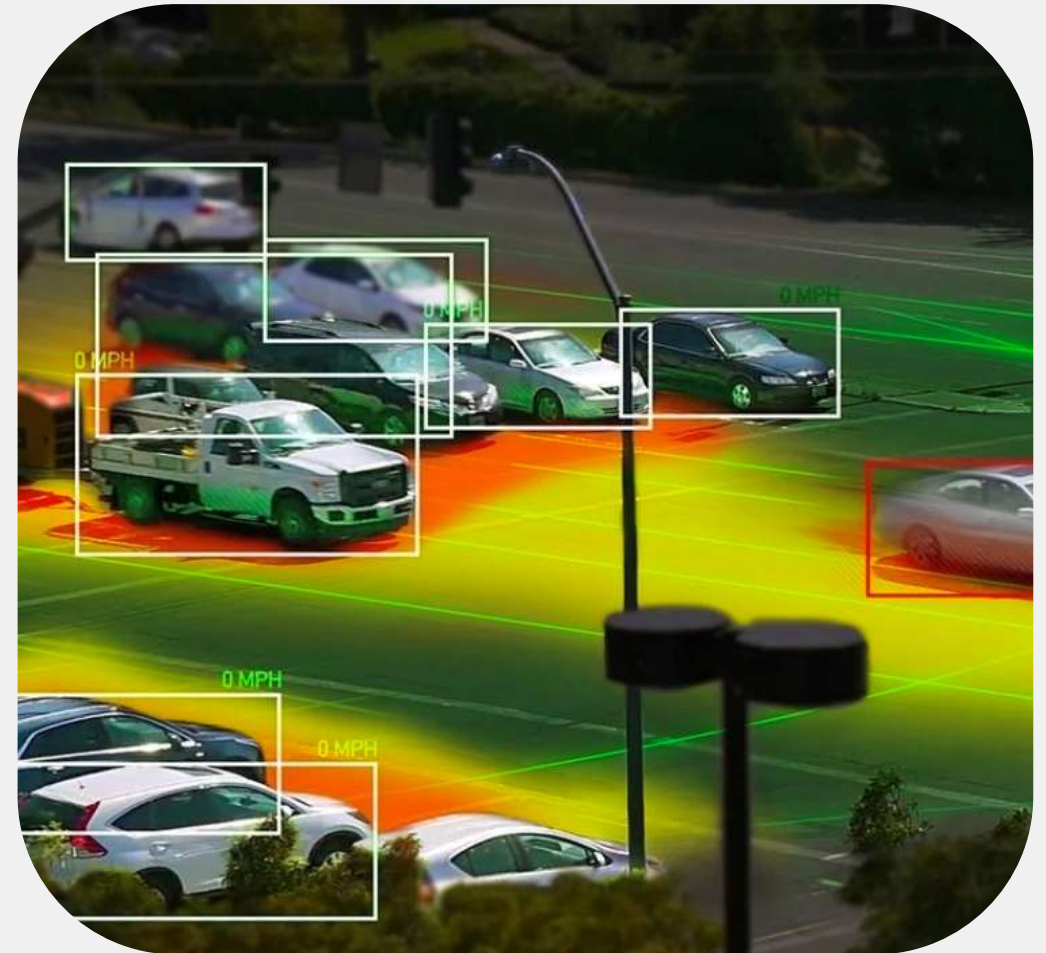
Vehicle Counting & Tracking INTRODUCTION



AUGMENTED STARTUPS
Computer Vision | AI | Robotics

Overview

- **Vehicle Detection**
- **Object Tracking for Vehicles**
- **Counting Vehicles**



Why detect and track vehicles?

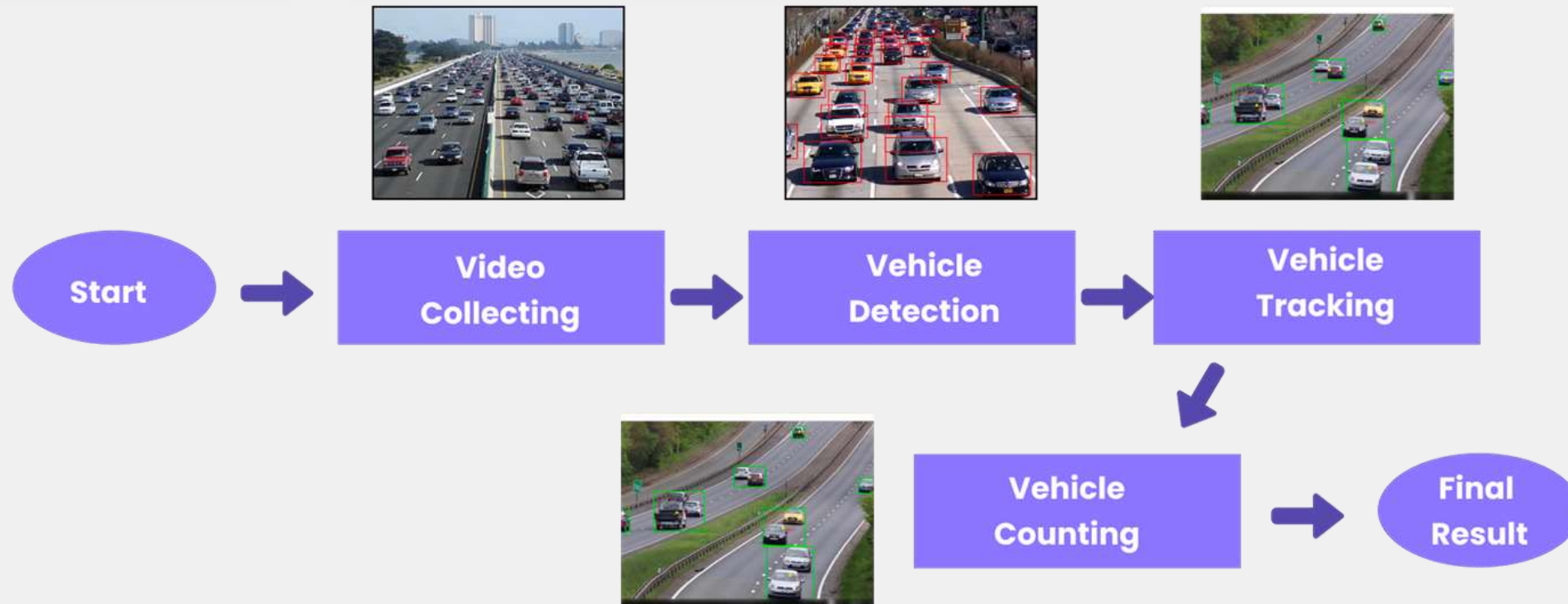
- Intelligent Transportation Systems (ITS)
- Data Collection
- Incident detection and emergency response

Vehicle detection on Jetson

- DeepStream
- YOLO
- Hello AI Jetson



How it works



Setting up the Environment

- **Jetson Nano**

- **OpenCV**
- **Jetpack 4.6**

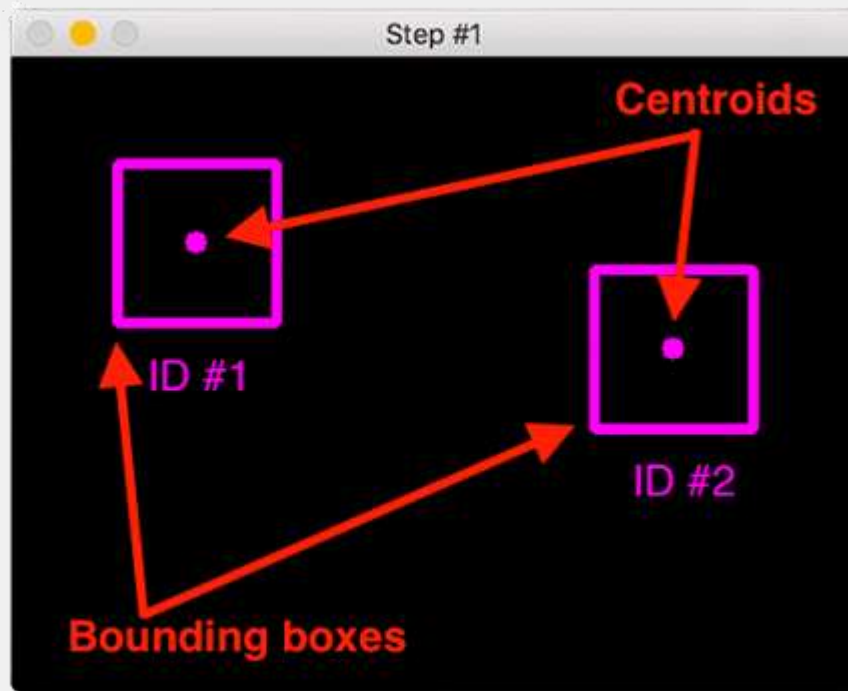
- **YOLO**

- **Weights**
- **Config**
- **Labels**

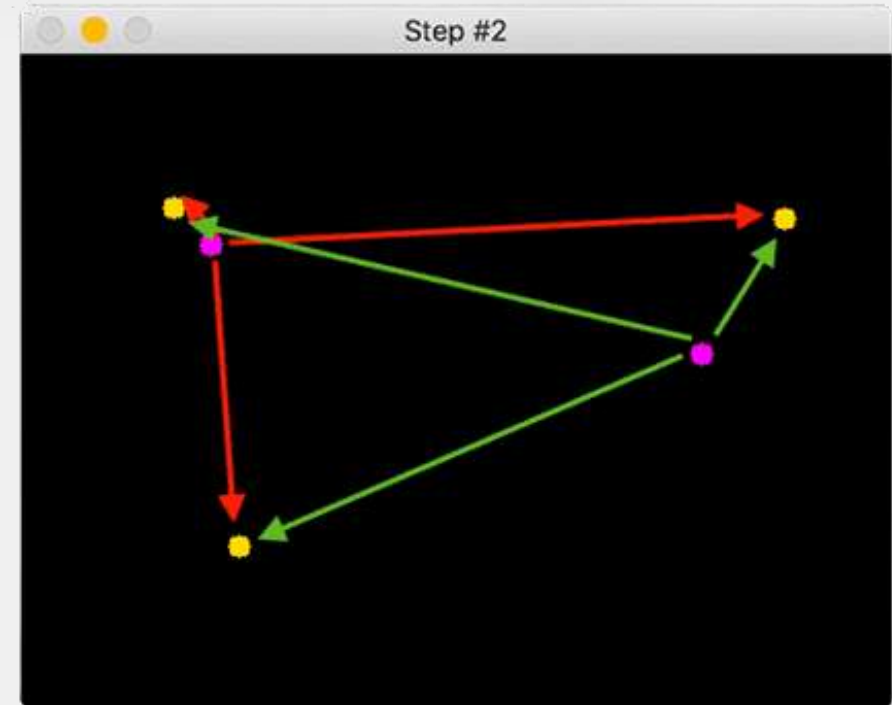
Implementation

- Setup YOLO class
- Setup Tracking class
- Fetch video and perform inference

Vehicle Tracking



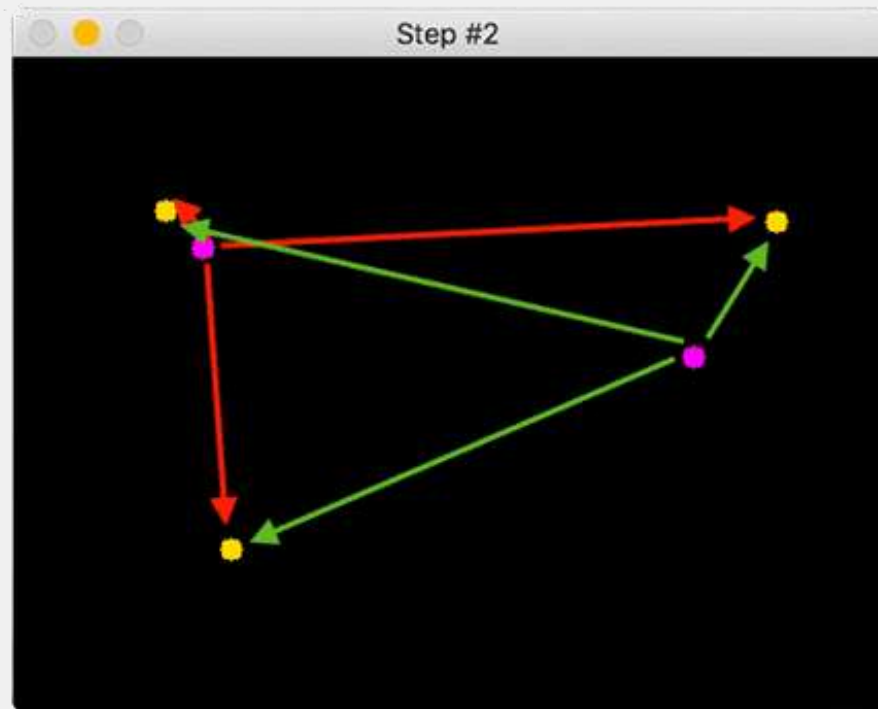
Find Centroids



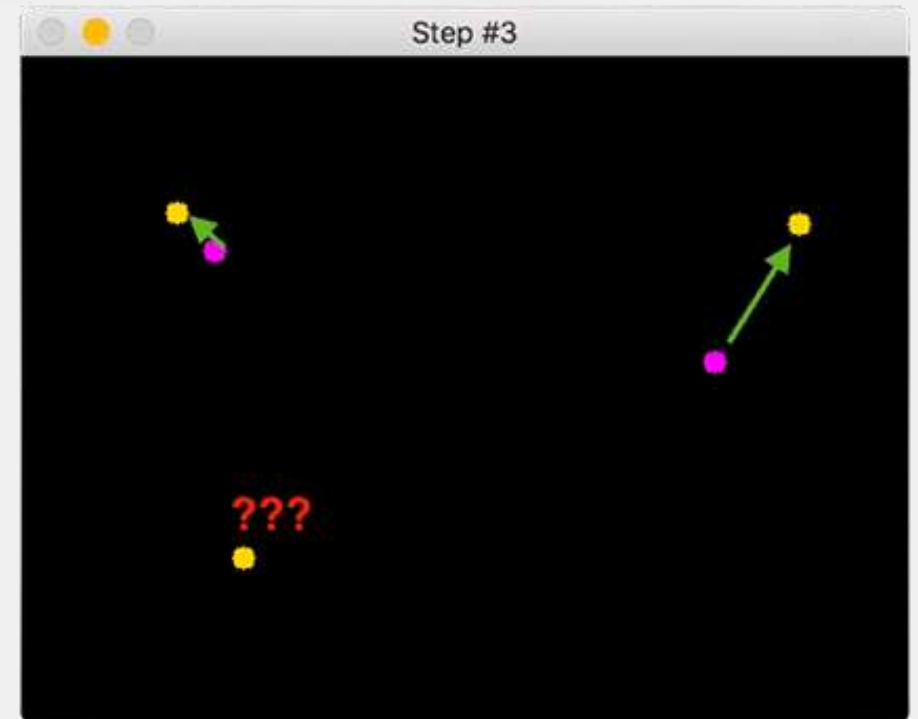
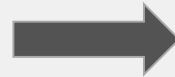
Calculate Distance

Vehicle Tracking

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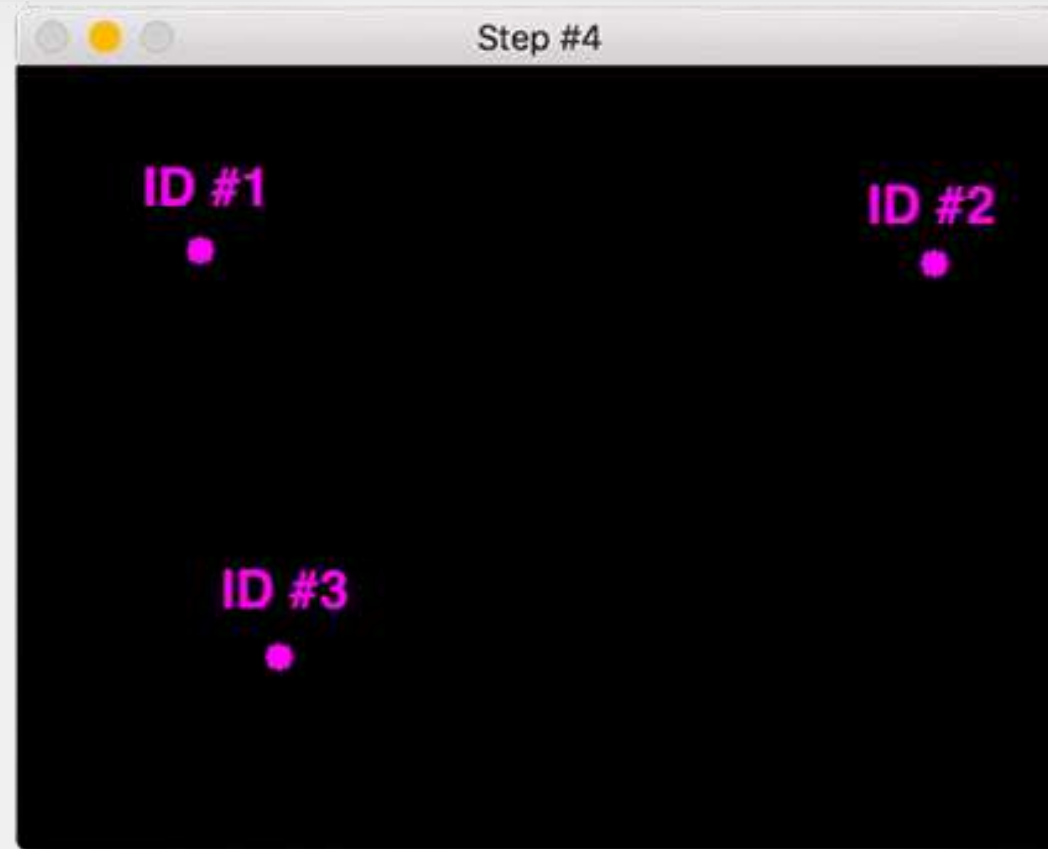


Calculate Distance



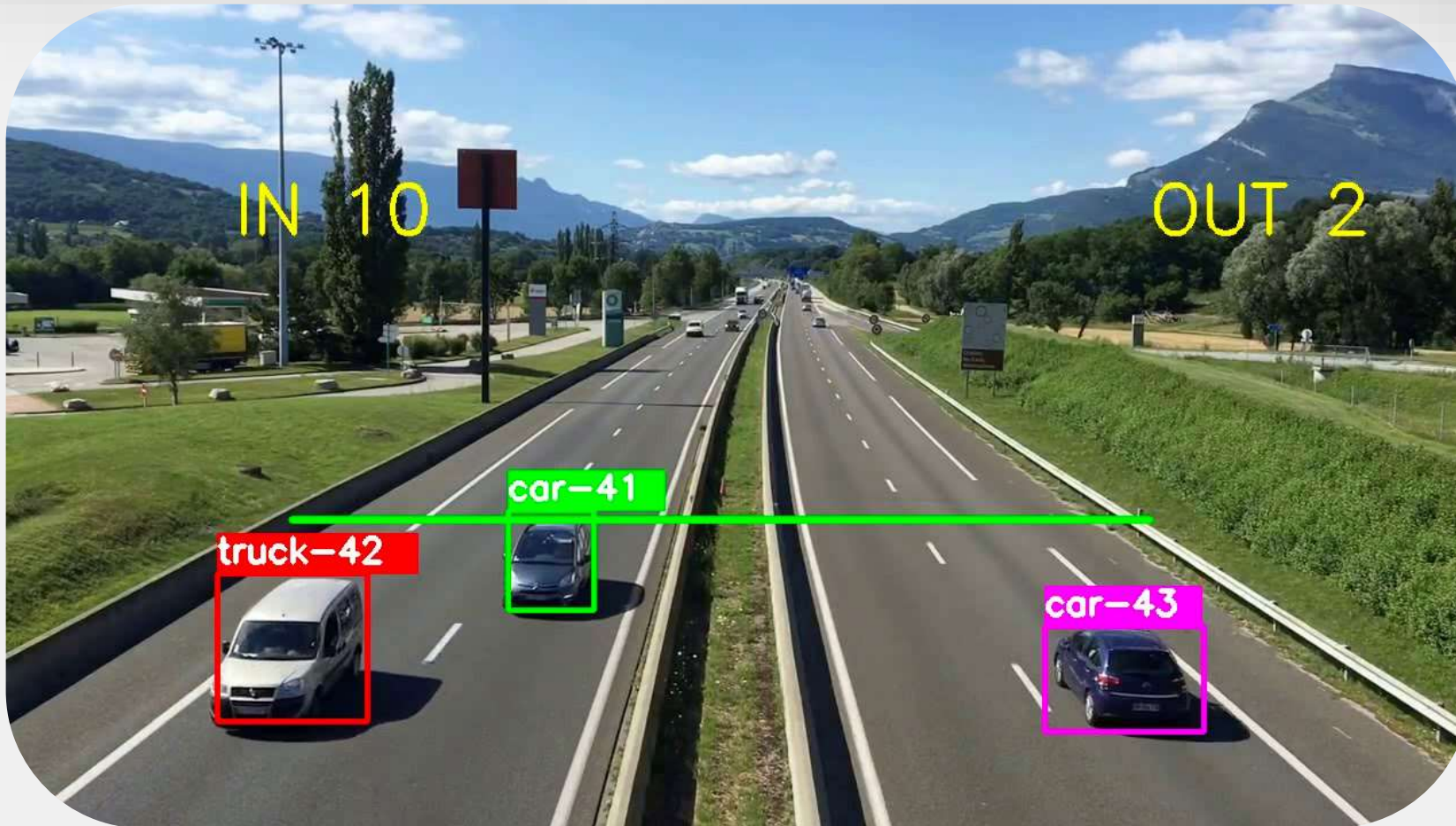
Update (x, y)

Vehicle Tracking

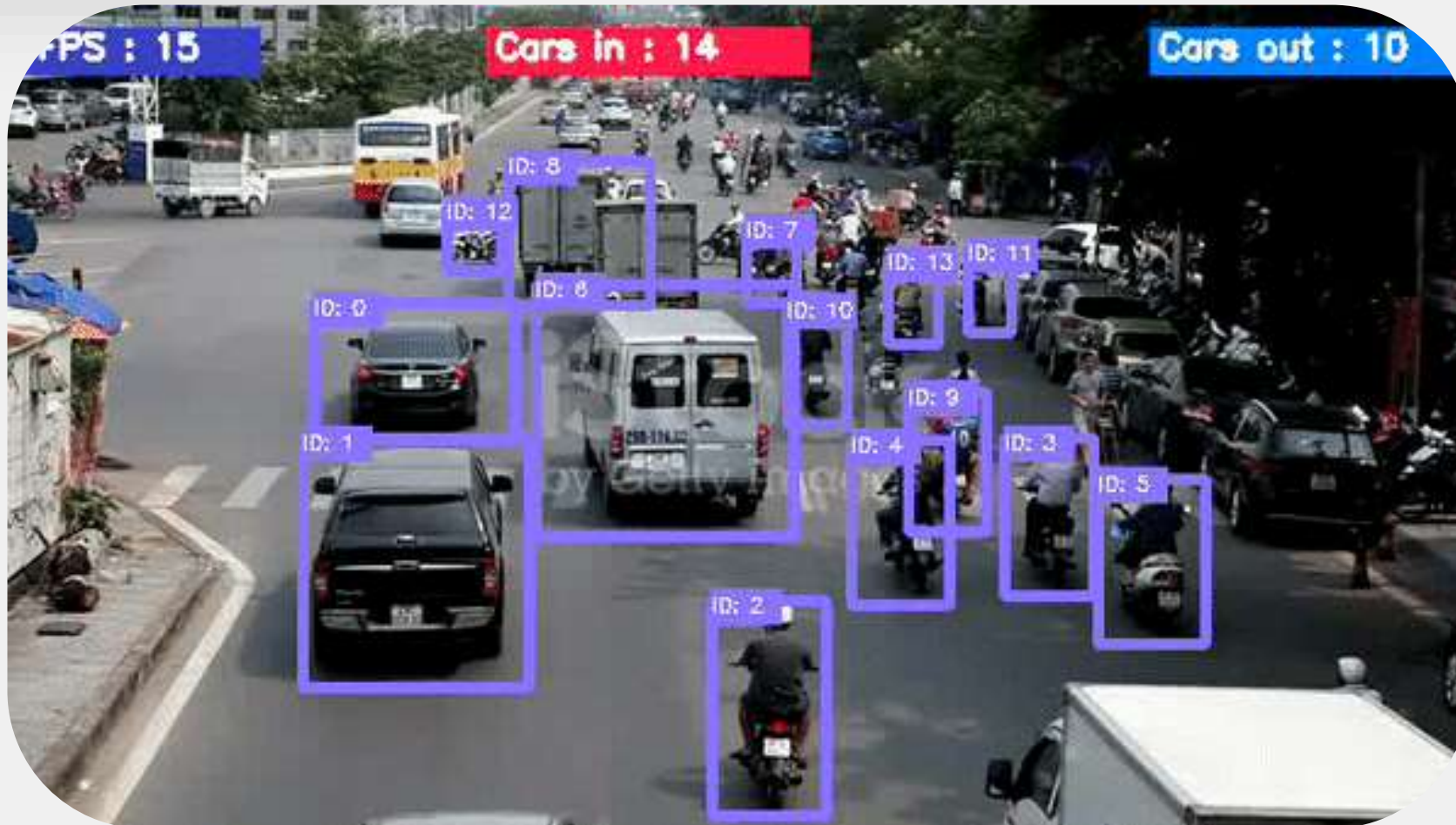


Assign ID

Vehicle Counting



Result



THANK YOU!

Web:
www.AugmentedStartups.com

WhatsApp:
www.augmentedstartups.info/whatsapp

