

# Vehicle attributes recognition barrier 0039 Model Card

## Model Card

### Model Details

- This model presents a vehicle attributes classification algorithm for a traffic analysis scenario. The model is optimized for recognizing vehicle attributes like type (car, bus, truck, van) and color (white, gray, yellow, red, green, blue, black), making it ideal for traffic monitoring, toll booths, parking management, and security applications. It takes a 72x72 RGB image as input and outputs softmax probability distributions for both vehicle type and color. Lastly, it is designed for fixed-camera environments.

### Intended Use

- Our application uses this model for AI inferencing on input video and we collect metrics while the pipeline is running
- The goal of the model is to provide real-time vehicle classification to enhance automation, security, and traffic analytics.

### Training and validation data

- We are not training or validating this model in our reference implementation

### Ethical Considerations

- We are using person-bicycle-car-detection.mp4 from <https://github.com/intel-iot-devkit/sample-videos> as input video to test this application tool.
- We are not storing any person or user related personal information.

### Caveats and Considerations

- The model's accuracy may vary depending on the quality and resolution of the input images. Ensure that the images used are of sufficient quality for reliable detection.
- Preprocess images to normalize lighting conditions and remove noise.

### Quantitative Analysis

- We are not doing quantitative analysis in this application tool but we do display metrics mentioned below to the user.

### Factors

- We are also not evaluating this model in this reference implementation

### Metrics

- We are displaying metrics including throughput (FPS) and system level metrics: CPU/GPU utilization, memory utilization, CPU/GPU frequency, CPU/system temp, GPU power, GPU engine, and package power. In this application these metrics are collected and displayed to the user via gauges.