



NXP ADAS Vehicle Detection Demo

Revision information			
Revision number	Date	Last updated by	Release status
1	02/04/19	Ohad Kleinman	

This document describes the details of Brodmann 17's Vehicle Detection Demo. The demo includes detection of vehicles on video / single image. The Vehicle Detection module is a very integral part of the fast, efficient ADAS system Brodmann17 is creating and is intended to show Brodmann17 capabilities in creating lean, lightweight DL modules that will run on a plethora of HW edge devices. The current demo was built for a target device with NXP S32V2 architecture.

The input parameters and output format are detailed next.

Specifications:

Input resolution - the model can process any input resolution, the details below are referring to 720x1280 input resolution, for different resolution the results will change.

Minimal Object Size - the minimal object size is 25x25 pixels

Speed Benchmark:

The performance listed below are based on the 4 x ARM Cortex A53 of the NXP S32V2

Input Image Size	Process Time [ms]	FPS [1/s]	MMACs
1280X720	186	5.4	213

Instructions:

1. Copy the ZIP file (bd17_example.tgz) to your local folder.
2. Extract the ZIP in the folder.
3. Write the following command:

```
export LD_LIBRARY_PATH=.
```

4. Make sure the files have permission using chmod:

```
chmod a+x bd17*
```

5. To run the binary on a given image please run:

```
./bd17example -model <model_path> -image <image_path>
```

4. Here is the full list of options:

-image <path>	detection on single image
-folder <path>	detection on a folder of images (all files must be images, non-recursive)
-list <path>	detection on a list of images (path can be relative or absolute)
-model <path>	given model to run on.
-pause 0/1	pause while the detection results
-csv <path>	path for output of detections

5. The expected output is with the following structure:

The expected output is with the following structure:

```
<image_path>,<left>,<top>,<width>,<height>,<confidence>
```

6. Another option will be using the bd17_vehicle_example.sh script that contains the following command line:

```
./bd17example -model model_vehicle_v0 -image image.jpg
```