

Customer case Study

Automotive





Smart ADAS

USA ADAS Platform Vendor

Smart Rear-view Mirror



Requirement

- Design and Development of a BSP and porting to Android HAL layer on given Multi-Processor Platform
- Support addon features

Solution

- Implemented BSP package Uboot in both Linux & Android OS, and HAL layer porting
- Implemented features such as Fisheye camera (4X), front and rear-view camera, touch system, multi-sensor ((Accel , Gyro , AMS , etc.), Vehicle diagnosis interface, on-board storage and more...

Customer Benefit

Go-to-market with improved confidence with rich features, multi-platform support, product quality and performance differentiation than their competitors.

2 Multi-Processor Architecture

2 Operating System Support (Linux & Android)

15+ Devices Drivers (Android HAL)

Smart ADAS

Japanese ADAS OEM Provider

Traffic speed sign detection



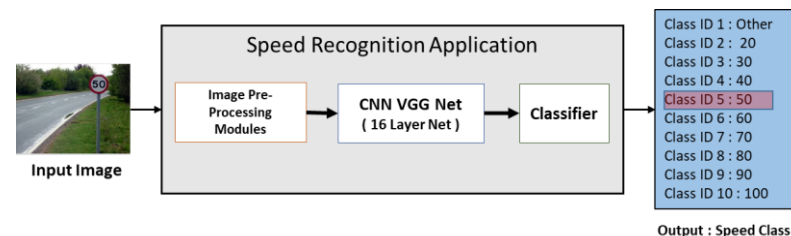
Requirement

- Design and Development of the solution that detects and classifies the traffic speed sign in real-time
- Solution must have light weight algorithm

Solution

- Delivered image pre-processing, and deep learning classification module with industry best light weight algorithm
- Implemented CNN 16 Layer network, dataset collection and generation, training and testing of CNN model using Caffe, detection and extraction of the region of interest (ROI)

Customer Benefit



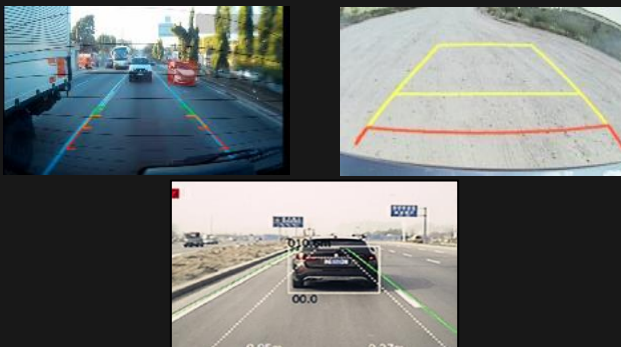
Accurate detection of traffic speed sign as an input to enrich their overall ADAS automation solution



Smart ADAS

Taiwan ADAS OEM Provider

Lane and collision detection and warning



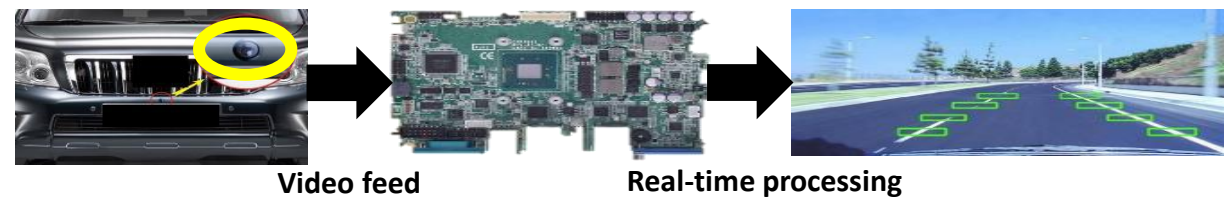
Requirement

- Provide software solution built on NVIDIA TK1 for Lane and Collision detection and warning
- It has to vision based solution input via cameras

Solution

- Delivered software solution that captures feed from cameras, detects and alerts in real-time
- Implemented CNN 8 Layer network for detection, anomaly detection, lane recognition, lane generation, and customizable warning output

Customer Benefit



Precise detection/warning of lane and collision event to enrich their overall ADAS automation solution

Smart Vehicle

India Car Reseller

Parking Assistance



Requirement

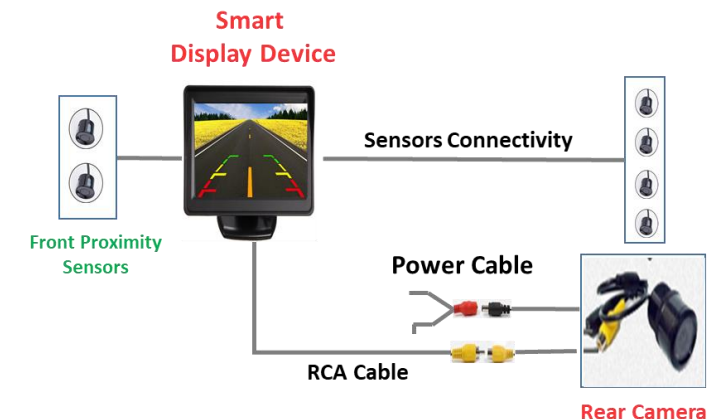
- Develop a low cost reverse driver assistance system which can be retro-fitted in old/new cars
- It has to vision based solution input via cameras

Solution

- Delivered 6X proximity sensors, 1X Camera, and 1X Dashboard display as an end-to-end solution
- Implemented real time image enhancement, blind spot detection, distance and obstacles monitoring,

Customer Benefit

Customer is able to deliver functionalities better than competition solution with lower cost, amplified particularly selling the old cars.

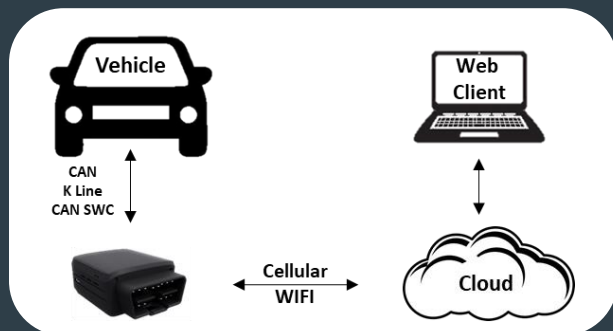




Smart Fleet

USA Telematics Solution Provider

OBD II Diagnostics & Telematics



Requirement

- Design and development of on-board diagnostic (OBD II) and telematics solution
- Must provide hardware, firmware, middleware and application development and deliver end to end solution

Solution

- Delivered boot loader, RTOS Porting, firmware, and stack architecture, design and development, optimization, and testing
- Implemented features GPS Tracking, geo-fencing, Connectivity (WIFI & Cellular), algorithms (tow and crash detection), protocols (CAN 2.0/CAN SWC), security (boot, FOTA, roll back, storage) and system alerts

Customer Benefit

Customer differentiated their offering by selling a single device with multi-purpose functionality that accelerated the sale of their fleet management solution.



Smart Fleet

APAC Cab Service Provider

Behavior Monitoring



Nvidia's Jetson TK1

Requirement

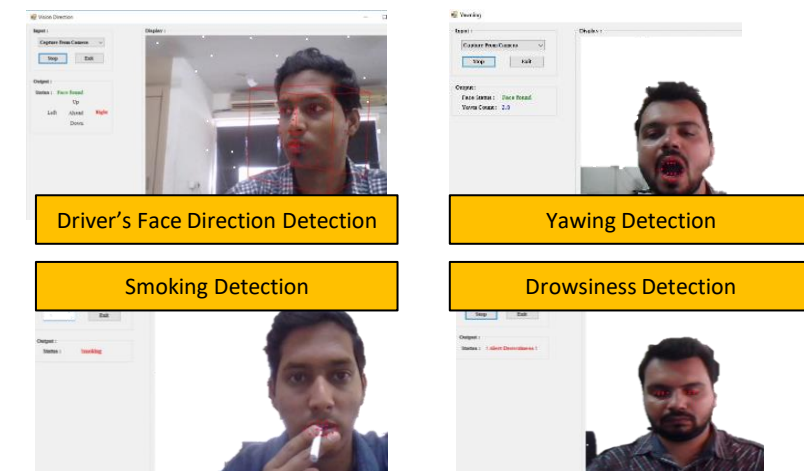
- Develop a solution to monitor the behavioural patterns of the cab driver.
- It has to vision based solution implemented using Nvidia's Jetson TK1

Solution

- Delivered high performance optimized software solution on Nvidia's Jetson TK1
- Implemented multiple real-time behavioural monitoring modules such as face detection, yawning detection, smoking detection, and drowsiness detection.

Customer Benefit

Customer is able to proactively detect and alert drivers to take corrective action, that helped in reduction of potential mishaps.



Smart Fleet

APAC Cab Service Provider

Driver Maneuver Anticipation



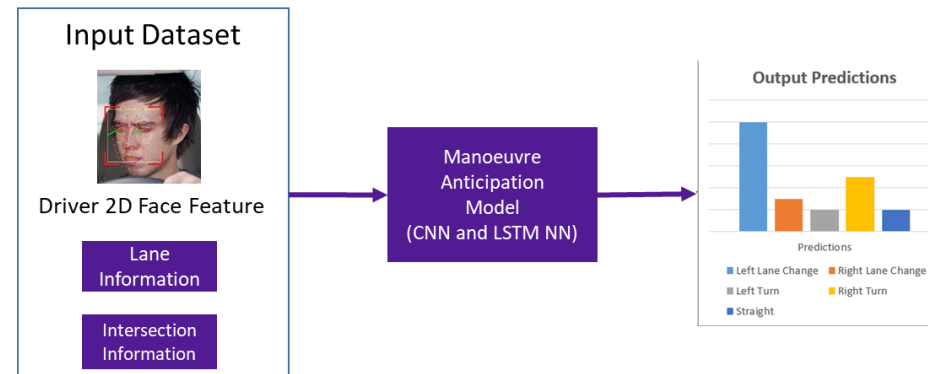
Requirement

- Develop a solution to anticipate driver maneuver ahead of time based on AI deep learning module

Solution

- Delivered software application for driver anticipated maneuver such as Lane change, turn etc. taking input from camera feed, lane and intersection data
- Implemented CNN and LSTM library on matlab with data collection and generation including training and testing of the model

Customer Benefit



Customer is able to proactively detect and alert drivers to take corrective action, that helped in reduction of potential mishaps.

Smart Vehicle

North American Vendor

Geo tracking and Fleet Management



Requirement

- Design and development of industrial smart vehicle tracking and fleet management solution
- It must support Geolocation & Geofencing based tracking solution

Solution

- Delivered End to end solution from hardware to firmware, connectivity (3G) cloud integration and mobile application
- Implemented real time vehicle tracking (geo-fencing/location), vehicle sensor data based events & alerts (start/stop, Idle, low battery, over speed, hard turn...) and In-vehicle environment sensing (cabin, temperature, pressure, humidity...)

Customer Benefit

High quality, high performance, robust, and feature rich end to end smart vehicle and fleet management solution to manage their operations

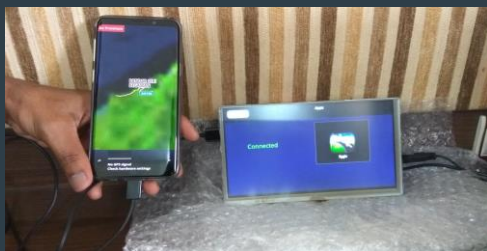




Smart Vehicle

North American Software Company

SDL Mobile and Head Unit Applications



SDL Platform Setup

Requirement

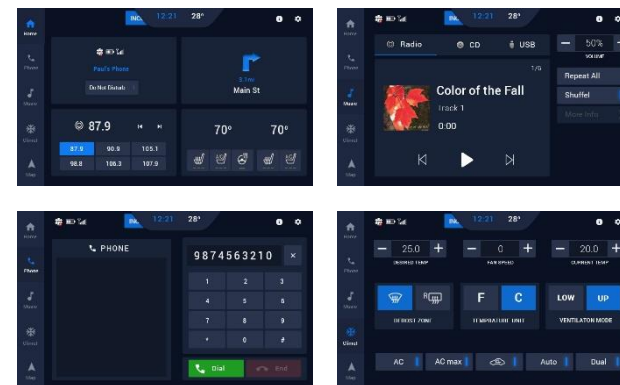
- Design and development emulated head unit using Smart device link (SDL) framework

Solution

- Delivered emulated head unit with HMI, and document instruction for testing infotainment application
- Implemented on SOC platform, BSP interfaces & plugins with SDL framework such as auto capturing and rendering, display with touch screen, audio over BLE/USB with multiple features such as Voice recognition, navigation support etc.

Customer Benefit

Customer benefitted testing their automotive infotainment application with the emulated head unit to reduced cost in the development lifecycle.



HMI Screen Snapshots



Smart Vehicle

APAC Automotive Solution Provider

AI/ML based annotation application tool



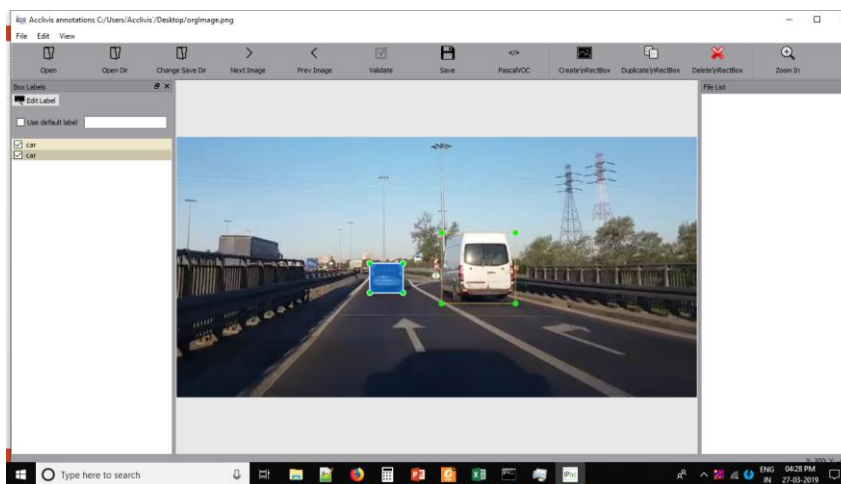
Requirement

- Develop an annotation manual/automation tool library with datasets for camera/optical image and LIDAR to train with millions of frames
- Ability to adapt the annotation tool library to any type of dataset generation

Solution

- Delivered a solution with the in-house developed annotation tool with number of features for both Image annotation and LIDAR annotation
- The example features implemented for image Annotation features includes single/multiple image annotation, semantic segmentation and zooming, and for LIDAR 2D/3D selection, zooming, auto save and more

Customer Benefit



Customer is able to use the dataset created by us for training and maturing their AI/ML algorithms and solutions to their end customer.



Partner for your success

We *solve* your customer challenges

We *start* your project when you need it

We *support* you to win your customer trust and orders

We *offer* SLA and profitability driven partnership model

We *provide* flexible onshore, offshore and nearshore engagements

We *deliver* products fast with high quality

We *automate* all to be fast to beat the slow

Being *efficient* and fast is all about *transformation*
and success is all about welcoming it.

To *transform* and to provide the *best product fast*, start today your journey with us.

customersuccess@w5rtc.com



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