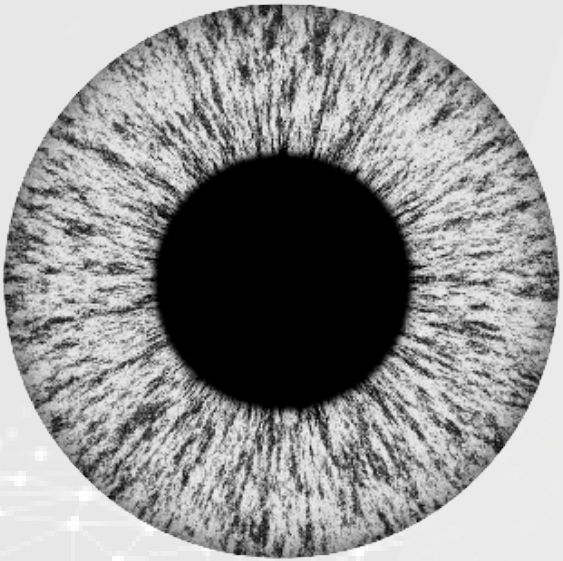
POLYHEDRUS

Traffic Systems Integration



Polyhedrus Vision System

The PVS is a state of the art embedded computer solution offering real-time image processing using Artificial Intelligence and advanced image processing algorithms.

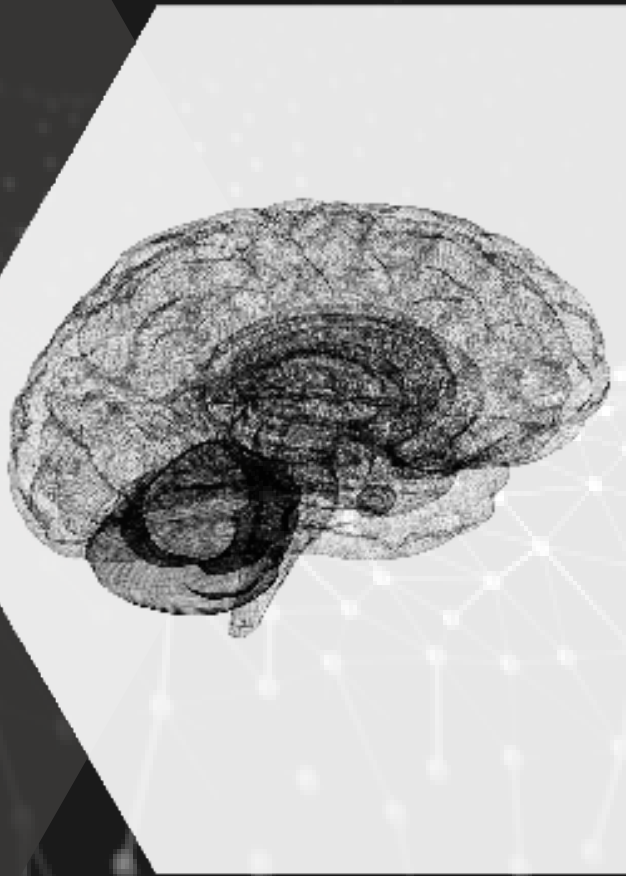
The PVS utilises the latest in GPU technology, providing power efficient AI computing. The deep learning solutions are designed to be embedded and produce fast image processing, either in real-time or offline, to provide automation in the areas of damage identification, routine inspection, object classification and object recognition.

Modular

From its inception, the PVS control unit has been designed to provide a fully modular system, based on the type of workloads needing to be performed.

With this in mind, the PVS optical layer can be completely customised, creating a truly bespoke system, which can provide breathtaking resolutions when dealing with inspections.

Our engineers and support staff will work with you to determine the optimal solution to deliver your company the best results.



Integration

The PVS is able to integrate seamlessly into most back-end systems or instations that provide an SDK or publish an interface protocol.

Recognition and Classification

The PVS is not restricted to looking for number plates, it can be trained to identify:

- Number Plates – no complex configuration for individual countries.
- Vehicle make / model / colour.[1]
- Special vehicle markings such as hazardous symbols.

1 – Suitable lighting will be required for night time operation. Either Infra-Red and / or white light may be required depending on the system requirements.

Analysis

The analysis software will allow the inspector to view all of the classifications, where anomalies were found, simplifying the previously laborious task of inspecting each individual image.

Each image is classified and stored providing an excellent test bed for ground truthing.

Workflow

Polyhedrus provides a traffic analysis solution that can operate over multiple vehicle lanes.

Using the PVS provides a different method of workflow from normal traffic camera systems :

1. Initially the artificial intelligence system is trained with images representing the type of vehicles or plates to be identified.
2. The pre-trained model is uploaded to the PVS.
3. The PVS can now be deployed and will be ready for operation.
4. Images are taken at a pre-defined frame rate and analysed in real-time.
5. The results are then classified and stored in the PVS relational database system.
6. Based on pre-defined rules, the acquired data can be uploaded into the Polyhedrus PVS front end software for further analysis.

Technical Specifications

Power Supply: 12-30V DC / 35W[1]

Size: 185mm x 140mm x 90mm (LxWxH)[2]

Protection level: IP65

Storage: Options for mini PCIe SSDs up to 1TB

Interfaces:

- o Two internal cameras
- o USB 2.0
- o 10/100/1000 Ethernet
- o Rotary 360° Lidar or Fixed Lidar or camera based collision avoidance sensors
- o HDMI output for live video feed
- o UART interface to flight controller option
- o UART interface for gimbal control option
- o I2C/SPI/CAN interfaces available for bespoke systems

[1] Depends on camera configurations used. 35W is a typical figure for a two camera system.

[2] Depends on camera configurations used. This is a typical figure for a two camera system.

Partners

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