



# SOLUTION SHOWCASE SMARTCOW



## ‘End to End’ Solutions for AI & Deep learning

### Challenges

- › Traffic Management
- › Number Plate Recognition
- › Vehicle Tracking
- › Road Safety

### NVIDIA Solutions

Jetson ‘Edge’ Computing

- › Low power consumption
- › Edge processing with no or limited connectivity
- › Proven Reliability

DGX:

- › Exceptional Performance
- › Efficient Model Training

### Results

- › Accurate Recognition
- › Easy-to-Deploy
- › Cost Effective integration and operation
- › No recurring costs



## SMARTCOW SOLUTIONS SOLVE THE PROBLEMS FACED BY GROWING CITIES

AI is revolutionising the City. From traffic management, number plate recognition and building access control, through to smart parking and accident detection.

SmartCow are experts in developing solutions to meet these needs, analysing video data in real time ‘at the edge’ – vital where the location, privacy needs or limited internet connectivity restrict the ability to pass data to a central server or cloud service.

### Solutions across the Smart AI City

SmartCow addressed these challenges by moving the computation to the edge with the NVIDIA® Jetson™ family of embedded solutions. By adding intelligence where it matters, the process of analysing video becomes fast, cost-effective and reliable.

### AI training – the data advantage

Deep Learning systems depend on data – accurately tagged and categorized to enable their revolutionary learning capabilities. Many companies have access to hardware and standard AI models, but few have the capability to capture, label and correctly annotate the data, to ensure AI models and recognition rates are consistently accurate.

Using NVIDIA’s end to end ‘Edge, Datacenter & Cloud’ AI platform capability, SmartCow’s investment in NVIDIA DGX supercomputers ensures their solutions perform at the highest possible levels.

### Traffic Junction Control

Managing busy road intersections is vital to ensure smooth traffic flow and avoiding congestion. As a ‘smart’ learning solution SmartCow can go further, allowing the detection of illegal parking, pedestrians and the identification of riders without helmets.



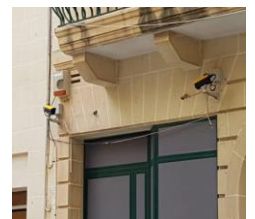
### Automated Licence Plate Recognition

As experts in the Indian market, SmartCow’s proven Automated Number Plate R (ALPR) recognition system can read plates from anywhere in India.



### Building Access Control

Automating and controlling access to a building, be it a hospital or private apartment, provides security to the occupiers and convenience to visitors. SmartCow camera systems not only identify visitors but provide a record of access for review if needed.





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### 'End to End' Solutions for AI & Deep learning

#### NVIDIA Products Used

- › Jetson TX2
- › DGX-1™ for Training
- › Jetson AGX Xavier
- › New: Jetson Nano

#### Processing & Input

- › 1080p cameras
- › 4K Cameras
- › Network Video Recorders

#### Software Used

- › Python Flask & C++
- › TensorFlow & NVIDIA TensorRT for annotation
- › NVIDIA CUDA



### A RANGE OF SOLUTIONS TO MEET MANY DIFFERENT REQUIREMENTS

SmartCow are an AI engineering company with offices in Malta and India, that specialises in embedded systems and deep learning. They have launched a range of high performance Edge AI solutions, backed by NVIDIA DGX workstations for accelerated training.

#### Product Family

##### HawkEye:

An Eye in the Sky, in an integrated smart camera. The video is processed locally on the device itself using deep learning, without transmitting it to the cloud thus ensuring privacy, security and unparalleled speed, all at negligible bandwidth costs.



##### Gatekeeper:

A multi-camera ALPR/ANPR system in a small and compact hardware platform with a solid construction, supporting:

- 4x 1080p cameras @ 30 FPS
- 2x 3.4Mp cameras @ 30 FPS



##### Medusa:

NVIDIA AGX Xavier powered platform for multi-camera video analytics at the edge.

The potential to run several state of the art, Deep Learning Models and provide support for advanced Intelligent Video Analytics.



##### NVIDIA DGX:

Back in their Head Office, SmartCow's investment in NVIDIA DGX Systems accelerates Deep Learning training, increasing model accuracy.



LEARN MORE

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Learn about SmartCow at: [www.smartcow.ai](http://www.smartcow.ai)

NVIDIA: [www.nvidia.com/en-us/autonomous-machines/intelligent-video-analytics-platform/](http://www.nvidia.com/en-us/autonomous-machines/intelligent-video-analytics-platform/)

