

Welcome to Monitor, thank you for subscribing. This month, using computer vision in measurement and control.

You can download Monitor as a pdf file from
<https://www.windmill.co.uk/monitor/monitor289.pdf>.



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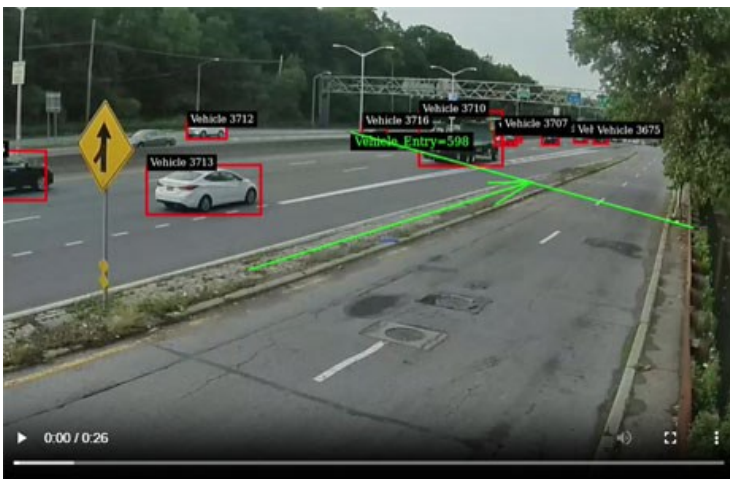
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Computer Vision

Web link: <https://www.windmill.co.uk/computer-vision.html>

Computer vision is a rapidly advancing field of artificial intelligence. The goal of computer vision is to give machines or software the ability to see and recognise objects and actions in images and videos.

At its core, computer vision is all about enabling machines to "see" the world and extract meaningful information from visual data. This can involve everything from simple image recognition tasks, such as identifying objects in a photo, to more complex tasks like tracking the movements of a person or vehicle in a video stream



Using computer vision to detect, count and classify vehicles which are passing a roadside camera

Computer vision technology has transformed several industries, making tasks faster, more efficient and more accurate. Today, computer vision is used in a wide range of applications, including robotics, security and people & vehicle counting and classification.

Computer vision algorithms must work reliably in a wide range of lighting and weather conditions

In the field of robotics, computer vision is used to enable robots to perceive and interact with their environment. Robots equipped with computer vision can identify objects, navigate through complex environments, and perform complex tasks, making them ideal for applications in manufacturing or agriculture. For example, inspecting products for defects or guiding robotic arms in precise movements.



Computer vision in agriculture

A recent application is counting and classifying vehicles. Algorithms analyse camera footage and learn to identify different types of passing vehicle.

Similarly, computer vision is used when counting people. Here it is important to determine which shapes are people, without identifying any individual. The algorithms can learn, for instance, to distinguish between staff and customers, and to detect people even if they are mostly obscured from the camera's vision. The people counts are useful for, amongst other things:

- Retailers gaining valuable key performance indicators
- Smart cities monitoring pedestrian flow to help the city authorities serve people effectively
- Businesses looking to open a new shop or restaurant gain precise figures for footfall past their proposed location to help them assess the potential for their new venture
- Buses counting passengers for real-time occupancy, route planning and fare reconciliation

Further Reading

[Counting and classifying vehicles](#)

[Counting people](#)

Your Data Acquisition Questions Answered: Magellan recommends Windmill data logging software

Question

"I have purchased a "Tandem Pro" gas analyzer from Magellan Instruments, a company based in the UK. This instrument has an RS-232 port (Full Duplex, 8 data bits, Parity non, 1 stop bit, 240 bps). I would like to be able to log data from this instrument to a computer, for example, via a USB port or HDMI and ultimately to excel or some other software. Something very basic would be fine. I don't think I want to collect data more than about once every ten seconds. This company has recommended Windmill to provide data logging solutions. What do I need to accomplish my goal? Thanks for any assistance. "

Answer

Monitor subscribers can download the Windmill software for free - contact monitor@windmillsoft.com for details. To log via the USB port you will need an RS232-USB converter. The serial settings you use here should be the same as those used by your gas analyzer. Set the Windmill ComDebug software to also use these settings (eg 8 data bits, Parity non, 1 stop bit).

You could use ComDebug to collect and save data. Or, if you wanted to

connect more instruments or perform more sophisticated logging tasks, the Windmill Logger software. You can then import the data into Excel or other software.

For help setting up RS232-USB converters see [Tips on Using USB-to-Serial Converters for Data Acquisition](#).

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