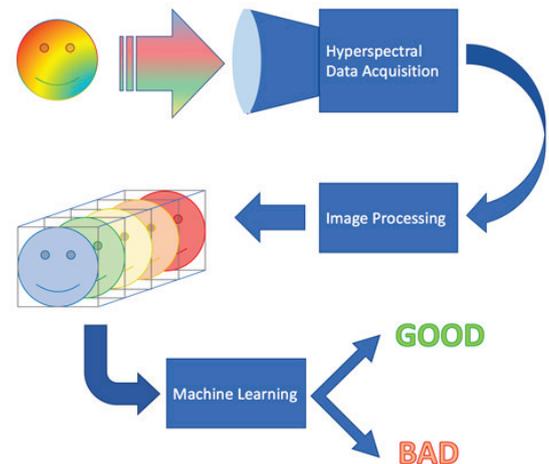




DESCRIPTION

For today's industrial applications, light-weight and smart vision systems that are able to minimise the amount of data (by removing unnecessary data acquisition and processing) and maximise the quantity of information become more than essential. At CSEM we develop three systems that fit those challenging requirements:

- 1) Our HYPER VISION multispectral imaging system allows classification of objects, from waste material to skin, in order to identify and classify in a wealth of applications. This happens by separating the image at multiple ones, each one at a particular colour. One of the most important features of the CSEM technology is customisation for different applications and environments along with flexibility in spatial resolution and in spectral channels. The system is low cost and the spectral filtering is done optically allowing it to be used over a broad range of wavelengths from the visible to the long-wave infrared. The hypercube resolution of the camera offers customization allowing one to avoid expensive over spec cameras. .



- 2) Our FASTEYE camera offers high-speed imaging for capturing rapid events for such applications as inspection systems and automotive safety systems. The 1 megapixel VIA1M imager can read up to 2000 frames per second, well beyond the capabilities of any standard industrial camera. The camera contains a large FPGA in which different Neural Network (NN) accelerators have been implemented; this tight integration of a vision system with Machine learning allows high speed and efficient classification for applications like the automatic defect detection in an industrial process line, obstacle detection, etc...
- 3) Our VIP CAMERA integrates a tiny CMOS camera with a high-performance microprocessor allowing sophisticated machine vision algorithms to quickly analyse the acquired images and video streams for robotics, for automotive, and for inspection systems. And all in a camera the size of a dice.

But these are just a few examples. These systems don't fit your requirements? CSEM experts can select from a toolbox including innovative image sensors, compact optics and intelligent machine learning software. Challenge us!

FUNCTIONALITIES & CHARACTERISTICS:

- Machine learning for information extraction and classification
 - High-speed camera (1Mpix, 2000FPS)
 - Integrated Neural Network HW accelerators
- Miniature camera with integrated machine-vision software
 - Applications include face-recognition, gesture recognition, people-counting...
- Hyperspectral camera
 - Customizable spatial resolution, no. channels and wavelength range
 - Adaptive: ability to trade spatial and spectral resolution

EXAMPLES OF APPLICATIONS

- Quality control , Process control, Medical diagnostics, Precision agriculture, Driver assistance, Industrial machine vision, Security

UNIQUENESS

The combination of advances in imaging technologies and in low-cost, high-performance embedded computing allows powerful vision sensors for detection, processing and analysis of images and video streams for a growing number of applications. CSEM, as one of the leading providers of advanced vision sensors in Europe, is able to propose modular solutions optimised for even the most demanding use-cases, via careful selection and integration of the best sensor, optics, processing electronics and machine learning algorithms, all integrated into a form-factor to meet the target size and cost.