



S I G M A
ARTIFICIAL INTELLIGENCE

SIGMA'S COMPUTER VISION PLATFORM

HERE AT SIGMA, WE ARE DRIVING ARTIFICIAL INTELLIGENCE BY AUGMENTING HUMAN CAPABILITIES WHEN IT COMES TO STREAMLINING PROCESSES

We humans are exceedingly adept at making sense of images, being able to detect the most subtle of nuances, and recognize events with a high degree of accuracy.

That said, our attention span wanes over time.

Artificial Intelligence is great at processing vast amounts of data.

For this reason, it can outperform human capabilities, because it is able to give its undivided attention to the task in hand over extended periods, and is able to quickly pick up on relevant situations, thereby freeing people up from monotonous and error-prone tasks.



By capitalizing on the latest in image modeling, as well as on the hardware needed for image processing, we have built a video analysis platform that is capable of applying a host of image and video processing algorithms to **detect and identify patterns, people or objects, to count them and make size, volume or distance measurements.**



It enables integration of information extracted from images with your business processes by providing actionable data (amounts, measurements, distances, object detection, behaviours, etc.) which supplement and underpin human performance where **surveillance and compliance, industrial, manufacturing, agricultural quality control, and detection of health problems**, etc. are concerned.

Models can be improved via ongoing learning as new images are available.



S I G M A
ARTIFICIAL INTELLIGENCE

Sigma Artificial Intelligence

165 10th Street; suite #300. San Francisco, CA 94103. +1 415 747 4491
Avda. Burgos, 114; First Floor. Madrid, Spain 28050. +34 913 185 004
info@sigmacognition.ai • www.sigmacognition.ai



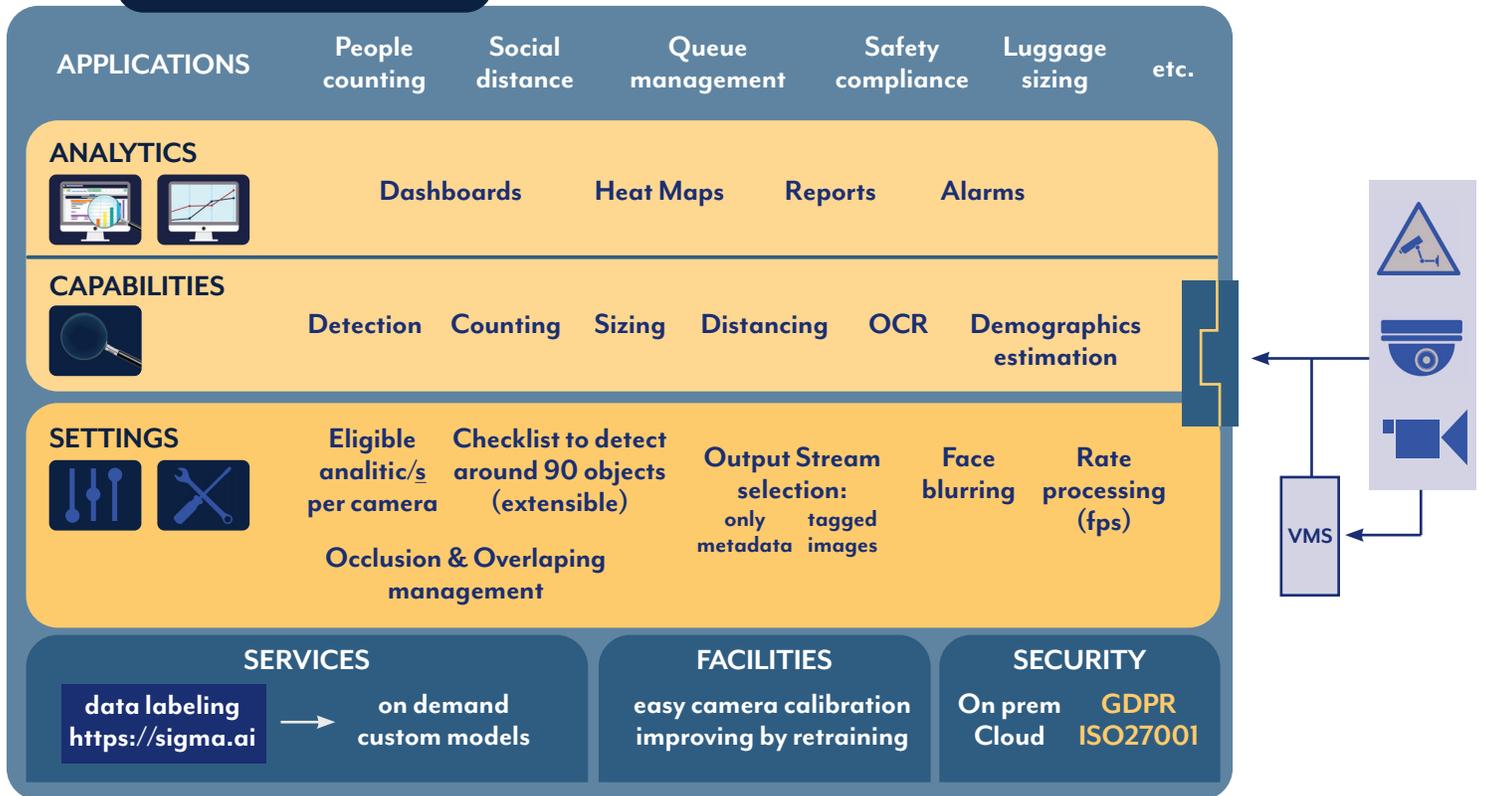
FUNCTIONAL DESCRIPTION

SigmaVision is a multifunctional image-processing platform which is there to lend a hand to your workforce when carrying out detailed monitoring tasks which require a great deal of concentration. Besides which, its analysis returns structured data which may then be processed using information analysis systems, thus making it possible for example to obtain movement patterns for objects, etc. It can be integrated with well-known VMS applications such as Milestone or Genetec. It features a growing range of automated Plug&Play vision functions which can be individually set for each camera, and includes tools for enabling installation and adjustment of cameras, for overseeing their correct functioning, and for viewing, analyzing and storing data.

It incorporates the following functionalities:

- **Counting and social distancing:** It comes with an occlusion analysis component that works in conjunction with the detection module. This technology may be utilized for estimating distancing between individuals, and for ensuring capacity is not exceeded at open or enclosed venues with camera surveillance.
- **Object detection** enables for example identification of Personal Protective Equipment (PPE) such as facemasks, helmets, gloves, etc. This software has been trained to detect a list of 90 different objects. It may also be easily adapted to detect new objects.
- **Heat maps** for spatial display of the density of items detected over time (moving persons or objects) in a given place by using a color-coding system in which a range of values is represented.
- **Object size / volume / distance estimation** using patented technology whereby only a single camera need be set in accordance with a standardized procedure, albeit without having to rely on known size references. It takes a two-step approach, and works by detecting the object on the ground, and then calculating its measurements according to the available 2D/3D image perspective. Possible uses include obtaining measurements for luggage, crates and other items.
- **Optical Character Recognition (OCR)** i.e. of characters embedded in images.

SIGMAVISION OVERVIEW





CONFIGURATION AND VISUALIZATION OPTIONS

SigmaVision may be set up on the client’s premises or be used in cloud environments, either pure or hybrid (whereby images are processed locally and their metadata sent up to the cloud) in nature. Unlike camera-embedded solutions, it may be applied to existing cameras or to new ones, and is more versatile in that it can take on board new analytics, adapted to meet client needs, which require the combining of information taken from different cameras, such as for example when tracking an individual’s movements through a shopping mall.

It provides tools that enable set-up and adjustment of each camera, covering an area roughly comprising 90 m², depending on the height at which they are positioned.

SigmaVision allows for an array of possible settings:

- **Dedicating each camera** to one or more specific detection tasks, with image overlap sensitivity, allowing overlaps between cameras to be properly accounted for.
- **Configuration of target objects for detection** based on a checklist which may be extended via an agile methodology for adapting to new objects/situations.
- **Presenting returned results in real time, superimposed on the actual processed images, or on customizable dashboards for aggregated analysis.** It also shows historical information for use in decision-making.



- **Application of detected face anonymization utilities** in order to ensure compliance with GDPR regulations, with the possibility of avoiding the storing of processed images where deemed necessary.
- **Adjusting the image-processing rate** for each detection task in “frames per second” –FPS–, as required.
- **Integration of events returned with the VMS alert management system** used or with client proprietary systems over APIs.

Sigma Artificial Intelligence has a wealth of experience when it comes to implementing solutions, ranging from image collection and annotation by our specialized data preparation teams, to customization of technology to relevant case studies where required, through to service operation and upkeep. We are committed to information security and privacy, which is why we are 100% GDPR compliant and ISO27001 standard certified.

