



SAGMI

100

ENDLESS INNOVATION SINCE 1919

Artificial Intelligence: industrial cases use

Donato Laico

Quality & Process Control BU
Vision Systems

SACMI Imola

SACMI Imola is the parent company of the SACMI Group, an Italian cooperative that is the leading international designer, producer and marketer of manufacturing plants and industrial technology for the ceramic and packaging sectors. SACMI has enjoyed market success for 100 years and is now a major Italian enterprise in terms of size, sales, areas covered and services provided.



The SACMI Group

1° plant provider to the global ceramic industry

1°

1°

1° global supplier of closure manufacturing machines

sales of €1,434 million



4,515 employees

INDUSTRY
4.0

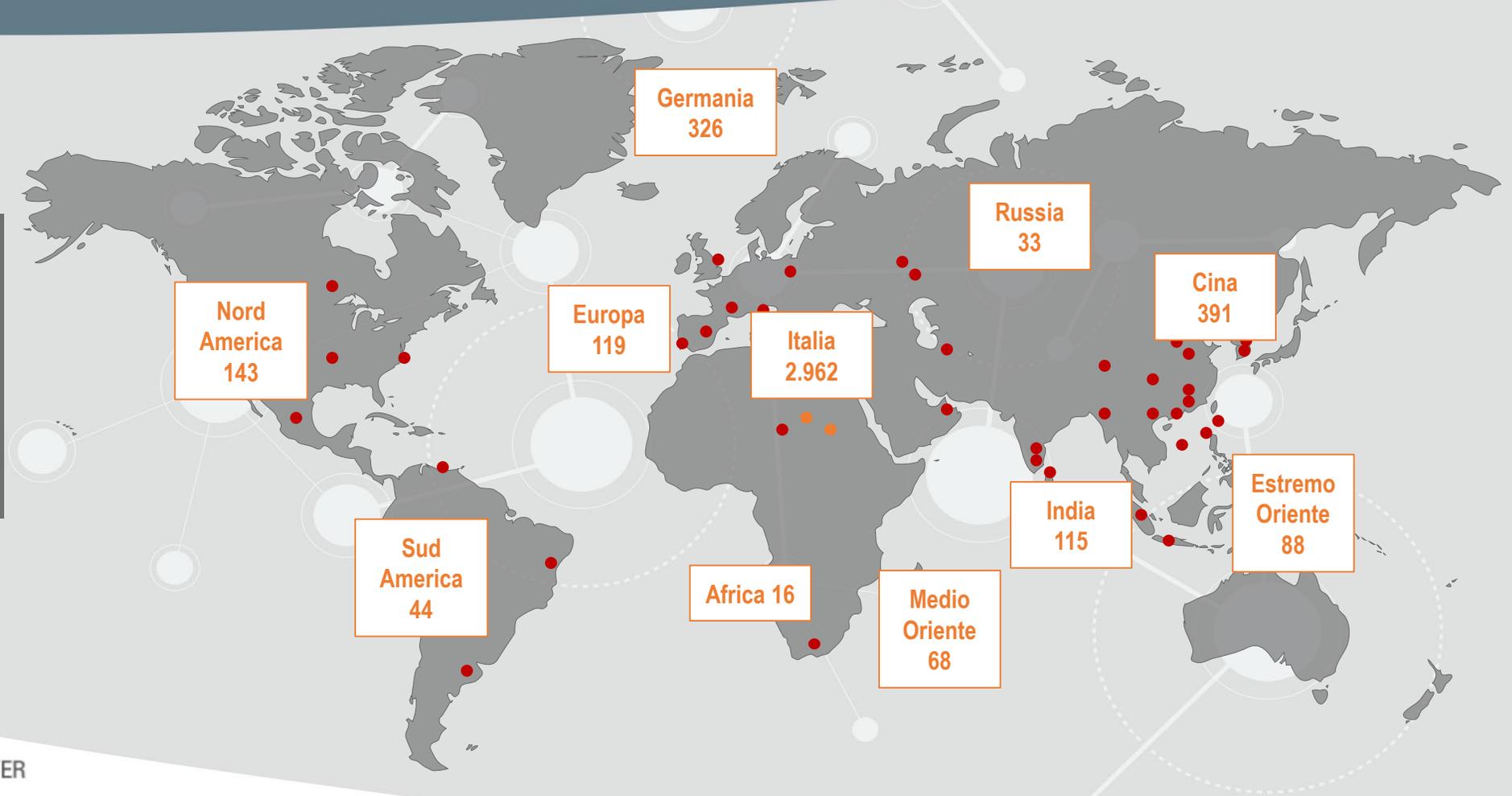


COMPUTER
VISION
CVS SACMI

SACMI employees around the world

4,515 employees

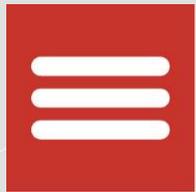
A network of over 80 companies providing sales and assistance services, plus 30 manufacturing facilities in Italy, Germany, Egypt, Iran, USA, Mexico, Brazil, India, Indonesia and China



RE-THINKING THE FUTURE



BUSINESS UNIT



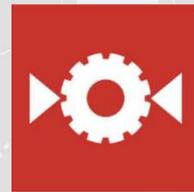
Ceramics



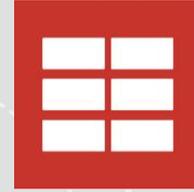
Closures &
Containers



Beverage



Metals



Packaging &
Chocolate



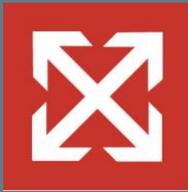
Quality
&
Process
Control



Customer
Service

- The use of a vision system comes from the need to control the quality of the products obtained from Sacmi machines
- The first system was installed in 1985 on a crown caps machine
- Currently the Quality & Process Control business unit designs (hardware and software) and builds systems for quality control of plastic and metal closures, bottles, labels, cans, lithographed sheets ...

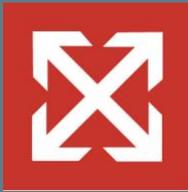




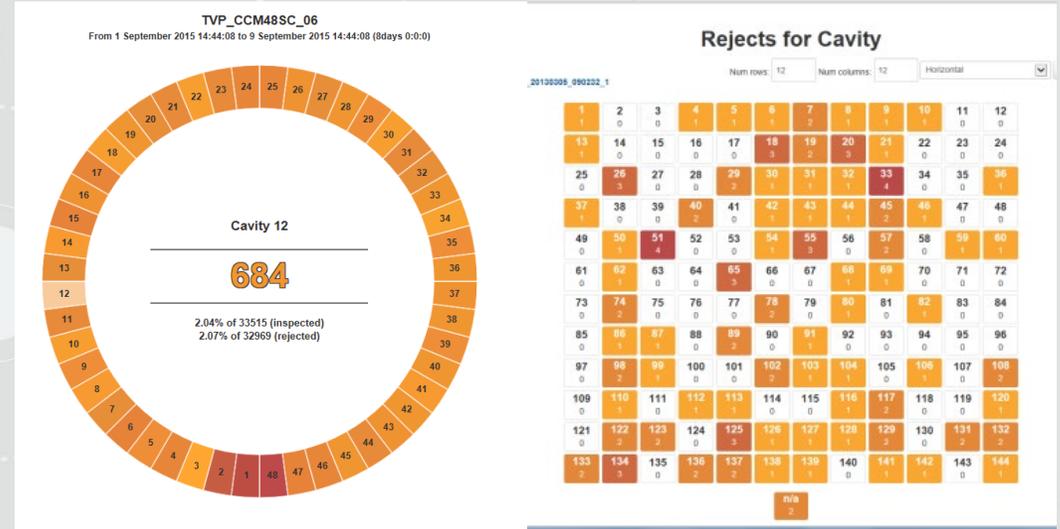
**ARTIFICIAL
INTELLIGENCE**
a necessary innovation
for SACMI Computer
Vision

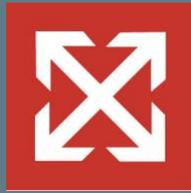


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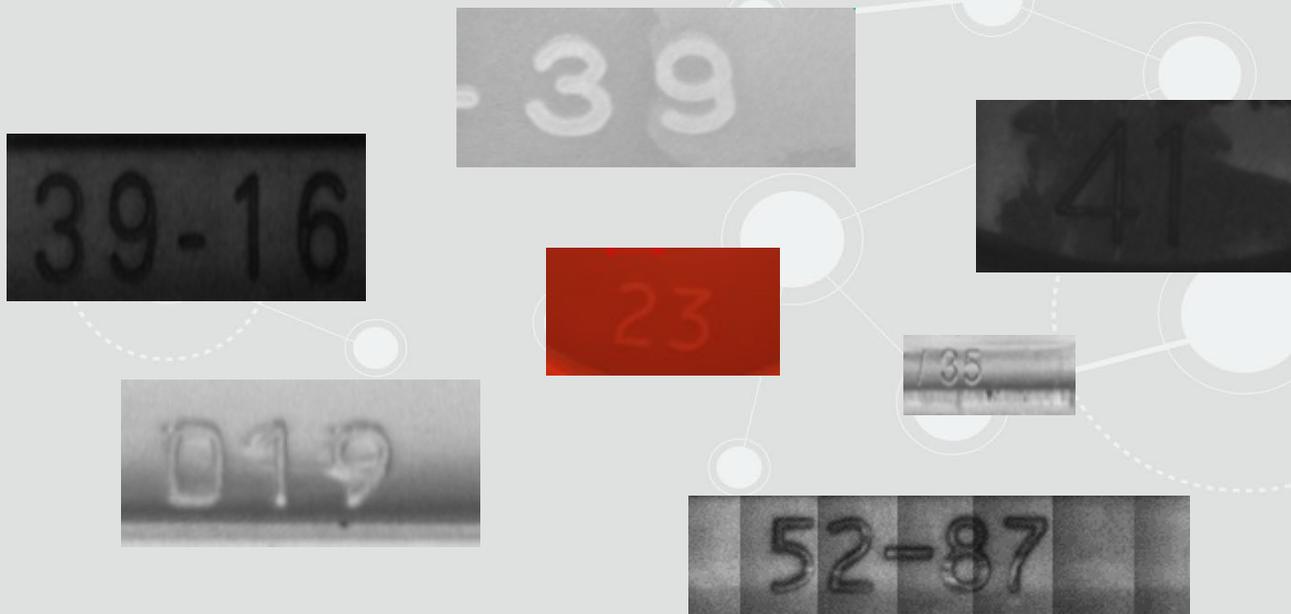


AI for simplification: the cavities numbers in the moulds





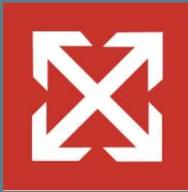
AI for simplification: the cavities numbers in the moulds



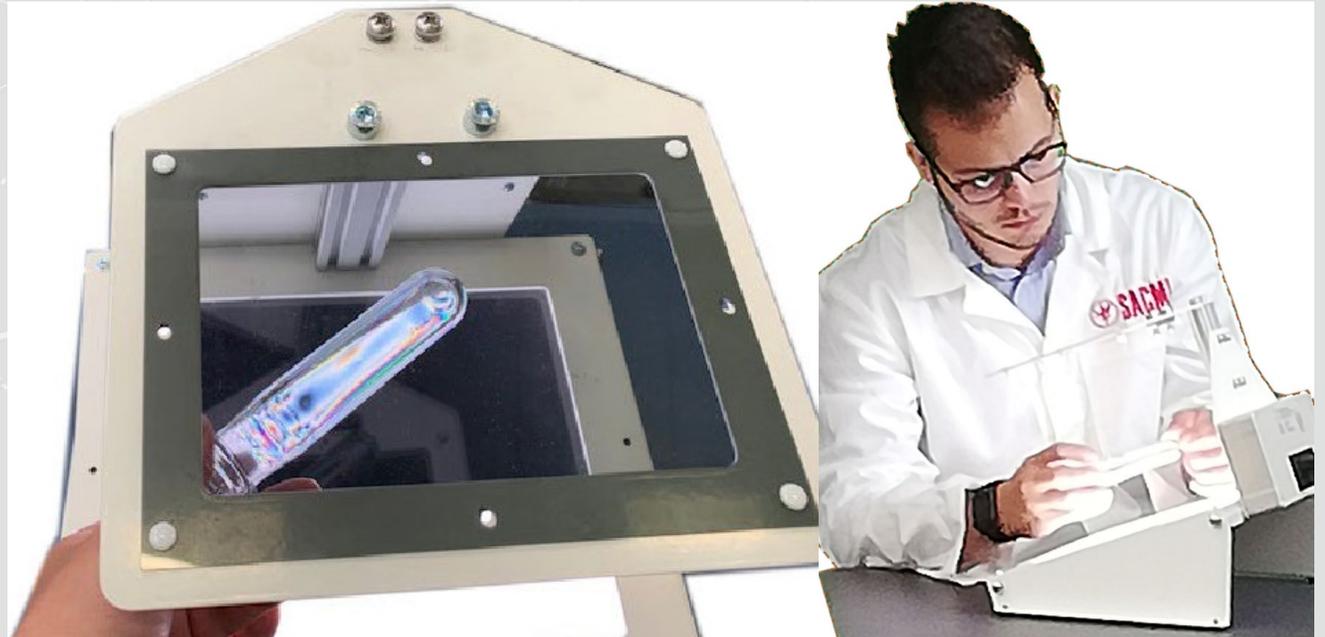
DEEP LEARNING techniques



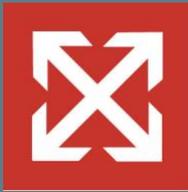
Numbers of any font type, contrast and font size are recognized without any additional operation by the machine operator.



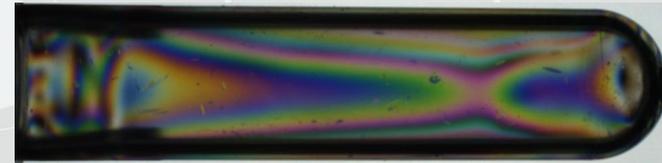
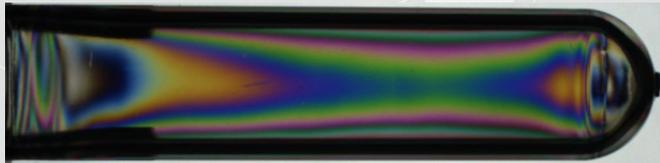
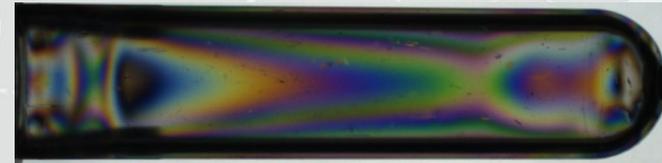
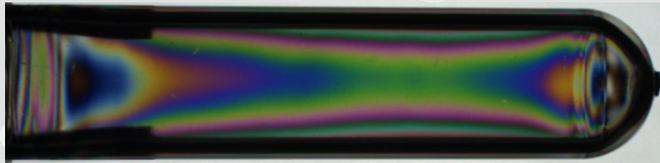
AI for process control: Identification of plastic stress in preform moulding



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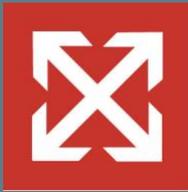


AI for process control: Identification of plastic stress in preform moulding



GOOD

DEFECTIVE



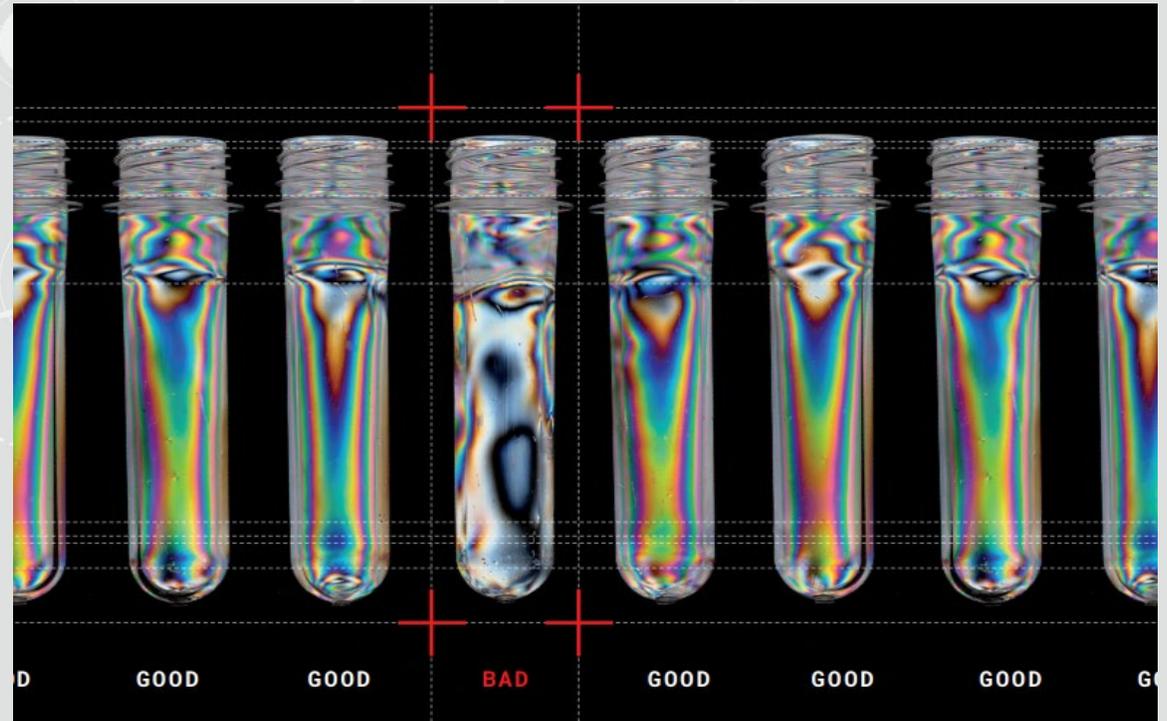
AI for process control: Identification of plastic stress in preform moulding

Artificial Intelligence techniques



automatic, unsupervised, simple and effective method to discriminate between defective and good containers:

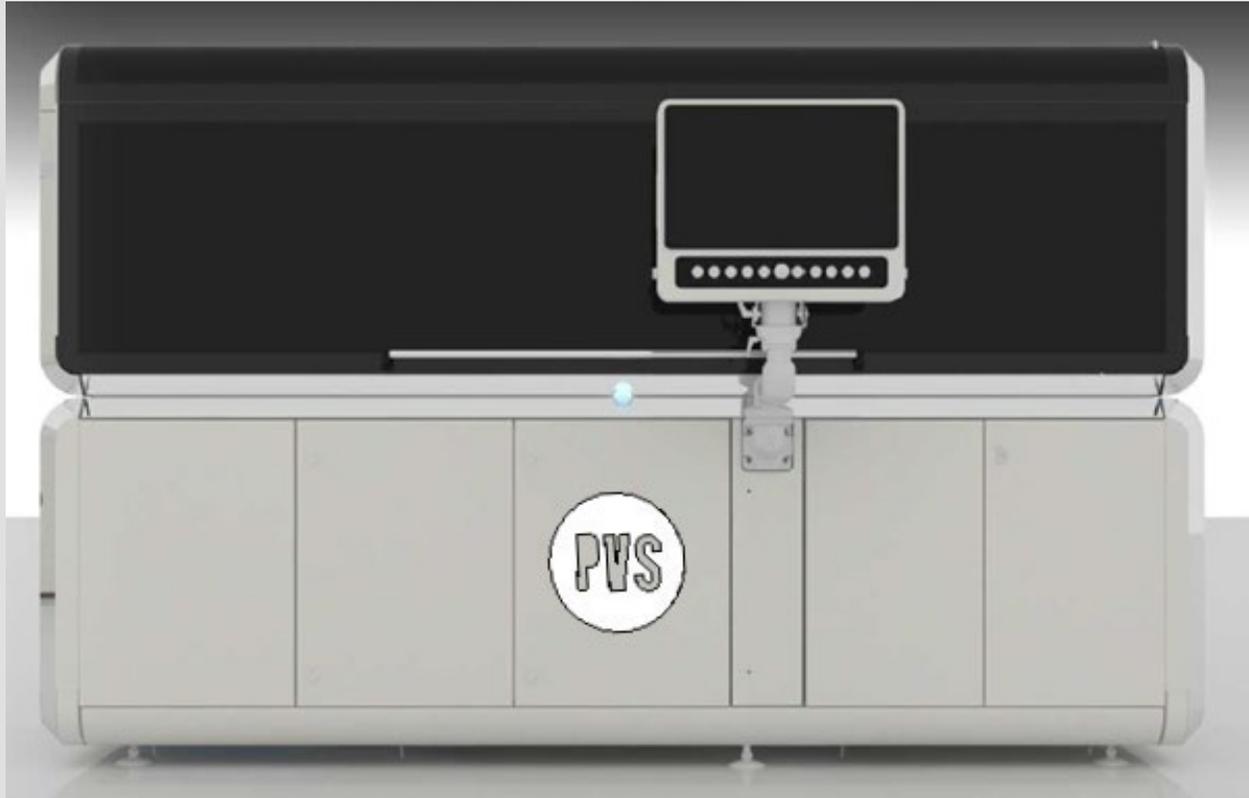
AUTOMATIC IN-LINE PROCESS CONTROL





PVS10LA

the first Sacmi Vision System with AI



The World's No. 1 Trade Fair
for Plastics and Rubber
Düsseldorf, Germany

See you next time
16-23
October
2019

 **SACMI** HALL 13 STAND 13A63



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Grazie!



SACMI